1-WAY

PYTHON.

SECURITY FOR THE BEST®

OWNER'S GUIDE

MODEL

414

Congratulations

Congratulations on the purchase of your state-of-the-art remote start and keyless entry system. Reading this Owner's Guide prior to using your system will help maximize the use of your system and its many features. For more information please visit the following website:

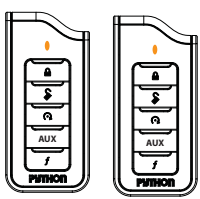
http://**www.pythoncarsecurity.com** – For general and additional guide information.

For any additional questions please contact your authorized Directed dealer or contact Directed at **1-800-753-0600**. (U.S. only)

What you get

Welcome to the best generation of keyless entry with remote start. Your system contains everything you need.

- Two 1-way SuperCode remote controls
- Owner's guide
- Warranty card



Important information

Government Regulations and Safety Information

Read the *"Government Regulations"* and *"Warning! Safety First"* sections of this manual prior to operating this system.

Warning! Failure to heed this information can result in death, personal injury or property damage and may also result in the illegal use of the system beyond its intended purpose.

Your Warranty

Your system comes with a warranty. Please make sure you receive the warranty registration card and proof of purchase from your dealer indicating the product was installed by an authorized Directed dealer. You can validate it online at **www.prodregister.com/directed** or complete and return the warranty registration card.

Replacement remote controls

If additional remote controls (P/N 7153P) are desired, please see your authorized dealer or visit us at **www.directedstore.com** to order.

Contents

Getting Started 3
Keys to using this manual 3
Remote Control 4
Using your System 6
Commanding the system 6
Performing Commands 6
Remote Control Command table 7
Basic Commands (Direct Access) 8
Lock 8
Unlock 8
Remote Start 9
AUX/Trunk 9
Advanced Commands: (Level 1) 10
Silent Lock 10
Runtime Reset 10
AUX 1 10
Advanced Commands: (Level 2) 11
Remote Valet 11
Timer Start 11
AUX 2 11
Advanced Commands: (Level 3) 12
Car finder 12
Smart Start 12
AUX 3 12
Advanced Commands: (Level 4) 13
Defogger 13
AUX 4 13
Remote Control Configuration 14
Remote Programming 14
Remote Pairing 14
Remote Programming 15
Remote Features 15
Starter Kill Override 17
Remote Start Features 18
Pit Stop Mode 18
Key Takeover 18
Remote Start Safe-lock 19
Disabling Remote Start 19
Advanced Start 19
Manual Transmission Start (MTS mode) 20
Turbo Timer Mode 21
Remote Start Faults 22

Remote and System Operations 23
Passive Locking 23
Auto Re-locking 23
Valet Mode 24
Power Save 24
Rapid Resume 24
Car Select 24
System Expansion Options 25
Battery Information 26
Low Battery Alerts 26
Battery Replacement 26
Battery Disposal 27
Glossary of Terms 28
Government Regulations 29
Warning! Safety First 30
Installation 30
Remote Start Capable 30
Manual Transmission Vehicles 30
Interference 32
Upgrades 32
Water/Heat Resistance 32
Limited lifetime consumer warranty 33

Getting Started

Keys to using this manual

Specific actions (in bold type) and style conventions are used consistently throughout this manual, they are as follows:

- **Press:** implies pushing in and releasing a button.
- **Hold:** is used after Press actions when a button needs to be held in position for an extended period of time, typically several seconds.
- *Italicized* words denote section/sub headings in this guide and can be located through the table of contents.
- An asterisk (*) when used after a word or phrase denotes that additional details can be found in related sections usually noted at the bottom of the page or end of the section.

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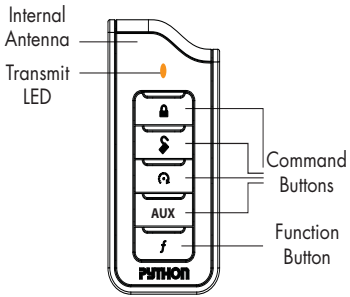
Remote Control



Feature	Description
Internal Antenna	Used for transmitting information
Transmit LED	Active when transmitting information
Command buttons (4)	Used to perform locking, unlocking, auxiliary channel and remote start commands
Function button	Used to access function levels for commands, configuration menus for programming and Car Selection

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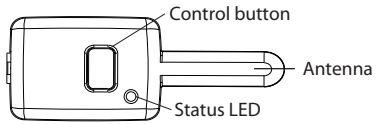
Control Center



The Control Center, typically located on the upper part of the front windshield. It consists of:

- The In-vehicle system antenna.
- The Status LED, as a visual indicator of the system's status.
- The Control button, for placing the system into Valet Mode* and to perform the Emergency Override operation.

* See *"Remote and System Operations"* section for details.

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Using your System

Commanding the system

Commands, Basic or Advanced, are used to activate system features and are performed by pressing one of the Command buttons. Basic commands control the most often used keyless entry and remote start features while Advanced commands control more specialized features.

Confirmations for Basic or Advanced commands are indicated by horn honks* and parking light flashes. A description of each feature confirmation is found in the following Basic command and Advanced command sections.

Performing Commands

Perform Basic commands by pressing a Command button.
Perform Advanced Commands by first accessing Levels 1-4 using the ***f*** button and then by pressing a Command button while within a level.

Advanced command example: Silent Lock

1. **Press** the ***f*** button once to access Function Level 1, The transmit LED single flashes for 3 seconds.
2. **Press** the button while the transmit LED is still flashing to perform the Silent Lock command.
3. The system will lock the doors and flash the parking lights, without horn honks.*

* The optional Horn Honk feature must be connected.

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Remote Control Command table

	Basic Commands	Advanced Commands			
		Function Level 1	Function Level 2	Function Level 3	Function Level 4
Level / Button	Direct Access	f x 1	f x 2	f x 3	f x 4
🔒	Lock	Silent Lock			
🔓	Unlock	Silent Unlock	Valet Mode	Car Finder	
	Remote Start	Reset Runtime	Timer Mode	Smart Start	Rear Defogger
AUX	Trunk Release	AUX 1	AUX 2	AUX 3	AUX 4
f	Function Shift				

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Basic Commands (Direct Access)

Lock

Press and release
Doors lock (if connected).

To Lock and Panic

Press and **hold**
To lock the system, then activate Panic. For Panic to work, the optional horn honk feature must be connected. **Press** the or button to stop Panic output.

Unlock

Press and release
The doors unlock (if connected).

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Remote Start*

Press and release

Activates (or if On, deactivates) the remote starter. The engine turns On, or the engine turns Off accordingly. If a Remote start configuration issue prevents the engine from starting, the parking lights flash a Remote Start fault report to identify the fault.

AUX/Trunk**

Press and **hold** **AUX**

The Trunk opens (if connected) when this button is pressed for 2 seconds.

*For Manual transmission vehicles see *"Manual Transmission Vehicles"*in the *"Remote Start Features"* section for more details.

**This is an optional feature. See your authorized Directed dealer for details.

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Advanced Commands: (Level 1)

Press and release the *f* button 1 time. The transmit LED illuminates in sets of single flashes to indicate Level 1.

Silent Lock

Press and release

The doors lock (if connected), without horn honks.*

Silent Unlock

Press and release

Doors unlock (if connected), without horn honks.*

Runtime Reset

Press and release

If more time is needed while remote start is active, runtime reset will reset the runtime counter to the pre-programmed setting.

Note	Remote Start must be On to use this feature.

AUX 1

Press and release **AUX**

Activates (or if On, deactivates) the Aux 1 output.

* The optional Horn Honk feature must be connected.

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Advanced Commands: (Level 2)

Press and release the *f* button 2 times. The transmit LED illuminates in sets of double flashes to indicate Level 2.

Remote Valet

Press and release

Enters (or if On, exits) Valet Mode. The Control Center LED turns on and off accordingly, and prevents doors from locking passively.

Timer Start*

Press and release

Activates (or if On, deactivates) Timer Start. The parking lights flash quickly four times for On and slowly four times for Off.

Note	System needs to be locked with the remote or Timer Start will not start the engine.

AUX 2

Press and release **AUX**

Activates (or if On, deactivates) the Aux 2 output.

* See *"Advanced Start"* under *"Remote Start Features"* for more details.

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Advanced Commands: (Level 3)

Press and release the *f* button 3 times. The transmit LED illuminates in sets of triple flashes to indicate Level 3.

Car finder

Press and release

The horn emits one long honk and the parking lights flash for 10 seconds. The parking light flashes stop if locked or unlocked while Car Finder is in progress. Lock and Unlock cancels the parking light flash.

Smart Start*

Press and release

Activates (or if On, deactivates) Smart Start. The parking lights flash quickly five times for On and slowly five times for Off.

Note	System needs to be locked or Smart Start will not start the engine.

AUX 3

Press and release **AUX**

Activates (or if On, deactivates) the Aux 3 output. See your authorized Directed dealer for details.

* See *"Advanced Start"* under *"Remote Start Features"* for more details.

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Advanced Commands: (Level 4)

Press and release the *f* button 4 times. The transmit LED illuminates in sets of quadruple flashes to indicate Level 4.

Defogger*

Press and release

Activates the vehicle Defogger circuit (if connected) while Remote Start is activated and the parking lights flash 3 times. For convenience, the Defogger circuit will also automatically activate 10 seconds after remote starting if the temperature is below 55°F.

Note	Remote Start must be active to use this feature.

AUX 4

Press and release **AUX**

Activates (or if On, deactivates) the Aux 4 output.

* This feature must be installed and turned on by an authorized Directed dealer.

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Remote Control Configuration

The remote controls have operations that can be configured to a user's personal preferences. The following instruction will direct you through the available programming options for both remote controls.

Remote Programming

Enter programming, **press** and **hold** the ƒ button for 8 seconds, the transmit LED turns on to indicate the Main Menu is accessed.

Exit programming or go back to a previous menu, **press** and release the ƒ button. When programming is exited the transmit LED turns off.

Remote Pairing

The following instruction will step you through the remote pairing operation.

Prepare the vehicle system for pairing:

1. **Turn** the key to the ON position.
2. Within 5 seconds **press** and release 1 time the Control button on the Control Center.
3. Within 5 seconds, **press** and **hold** the Control button. The status LED will flash one time and the horn (if connected) honks once to confirm the system is ready for remote pairing.
4. **Release** the Control button and proceed to next step.
   Pairing will exit if:
   - Step 7 is not completed within 60 seconds
   - The doors are closed
   - The ignition is turned off.

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Prepare the remote control for pairing:

5. Enter programming by pressing and holding the ƒ button for 8 seconds to access the Main Menu.
6. **Press** and **hold** the button for 1 second, 3 transmit LED flashes indicate the remote control is ready to pair.
7. **Press** the button,

The horn (if connected) honks to confirm the system has learned the remote control.

Remote Programming

Enter programming, **press** and **hold** the ƒ button for 8 seconds, the transmit LED turns on to indicate the Main Menu is accessed.

Exit programming or go back to a previous menu, **press** and release the ƒ button. When programming is exited the transmit LED turns off.

Remote Features

From the main menu, **press** the button to access the remote operation features, 2 transmit LED flashes indicate the remote features menu is accessed. **Press** the buttons indicated in the tables below to set the feature option.

The remote control will flash the Transmit LED to indicate the setting.

Feature	Button Press	Single Flash	Double Flash
Keypad Lock		Auto	Off *
No function		No function	No function
Car 2		Car 2 On	Car 2 Off *

* Indicates default setting.

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Keypad Lock

Options: Off, Auto

When Off, the buttons do not lock and always perform a command when pressed. When set to Auto, the remote buttons lock after a 20 second lapse between button presses to prevent unintentional operations.

To unlock the buttons, press the ƒ button followed by the button.

Note	When the Keypad is locked, the remote control may appear to be non-operational. It will not transmit a command or illuminate the Transmit LED and needs to be unlocked to resume normal operation.

Car 2

Options: Off, On

The remote controls can control two systems independently. When set to Off, the Car Select feature is not available. When set to On the Car Select feature is enabled. See *Car Select* (under *Remote and System Operations*) for detail on using a remote with 2 systems.

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Starter Kill Override

To bypass the optional Starter kill without a remote control:
Use the button on the Control Center to bypass the system. You can bypass the system only if you have the vehicle key.

To check proper operation:

1. While the vehicle is locked, open the door. Immediately insert the key into the ignition and turn it to the Run or On position. (all the indicators in the dash turn on)
2. Press and release the Control button one time. The LED on the Control Center will stop flashing and the optional Starter kill is bypassed. You can now start the vehicle with the key.

Note: The override feature allows you to select a specific number of presses needed to disable the system. If the override button has been programmed to a new number of presses by your authorized dealer, that number should be indicated below.

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Remote Start Features

Pit Stop Mode

To exit vehicle with engine running

The system keeps the engine running during short trips into the house or convenience store. To perform Pit Stop:

1. With the engine running, **set** the parking brake and **release** the foot brake.
2. **Press** the button, the parking lights will turn on to indicate remote start is on.
3. **Turn** the key to off, and **remove** it from the ignition, the engine continues running for the programmed runtime.
4. **Exit** the vehicle and lock the system.

Note	For Pit Stop on manual transmission vehicles follow the directions in the *"Manual Transmission Start (MTS mode)"* section.

Key Takeover

When you are ready to drive

The system keeps the engine running until the vehicle is ready to be driven. To perform Key Takeover:

1. **Unlock** the system and **enter** the vehicle, do not step on the foot brake.
2. **Insert** the key, **turn** it to the run position, and then **step** on the foot brake, the remote start then turns off.
3. The parking lights turn off to indicate remote start is off.
4. The vehicle is ready to drive.

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Remote Start Safe-lock

Remote start safe-lock makes sure the doors are locked while the engine is running and after, even if they are unlocked when remote start is activated. Door locks may require additional parts and labor.

Disabling Remote Start

Remote start can be disabled by moving the Toggle Switch to the Off position. If remote start is attempted while Off, the engine will not start. (See *"Remote Start Faults"* under *Remote Start Features*) move the switch back to the On position to resume normal operation.

Advanced Start

The Advanced start features; Timer Start and Smart Start will automatically start the engine to maintain battery charge or combat extreme cold when parked for an extended period of time.

Precautions for the Advanced Start features:

- Park the vehicle in a well ventilated area away from windows and doors that lead into inhabited spaces.
- Lock the vehicle, the engine will not start unless the doors are locked.
- Only one Advanced start feature can be enabled at any given time.
- For manual transmission vehicles MTS mode must be enabled before Timer Start or Smart Start can be activated.

  ### Timer Start operation

  Activation begins a countdown timer as set by the installer (default 3 hours). When the timer expires the engine starts. When the Remote start runtime expires the engine shuts off, and the countdown timer restarts. This will repeat as many times as set by the installer (default 6 starts). Timer Start is exited after the final start.

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Smart Start operation

Smart Start uses the settings for Timer Start in addition to temperature and battery level to automatically start the engine. Activation begins the countdown timer. When the timer expires the vehicle interior temperature and battery level is checked and, if the Temperature is above 100F, below 0F, or the battery level is below 10.5v, the engine will start. When the Remote start runtime expires the engine shuts off, and the countdown timer restarts. Smart Start is exited after the final start.

Note	The temperature and battery thresholds can be changed by an authorized Directed dealer if a higher or lower threshold is desired.

Manual Transmission Start (MTS mode)

When installed into a manual transmission vehicle, the system requires that the MTS mode is properly set when parking. If MTS mode is not properly set or is defeated after being properly set the system will not start the engine.

1. With the engine running, **set** the parking brake and leave the engine running.
   For Pit Stop or Turbo Timer mode (to leave the engine running after locking), **open** the driver door.
2. **Release** the foot brake (if pressed during Step 1), or **press** and **release** the foot brake anytime. As long as the engine is running there is no time limit to perform this step.
3. Within 20 seconds of foot brake release, **press** any command button on the remote, after 20 seconds return to Step 2 (For Turbo Timer Mode, press the optional dash mounted activation button

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or send the Timer Mode command.

4. The parking lights flash 5 times to confirm MTS mode is enabled and the remote start activates the ignition outputs.
5. **Turn** Off and **remove** the key from the ignition switch, the engine remains running.
6. **Exit** the vehicle, **close** all the doors and lock the system.
7. The engine turns off. If the door is opened in Step 1 then the engine continues to run.

Turbo Timer Mode

The system keeps the engine running for the Turbo Timer runtime and can be activated by remote control or optional dash mounted activation button.

1. With the engine running, **set** the parking brake.
2. **Press** the optional dash mounted activation button or perform the Timer Mode command.
3. The parking lights turn on and the remote start activates the ignition outputs.
4. **Turn** Off and **remove** the key from the ignition switch, the engine remains running.
5. **Exit** the vehicle, **close** all the doors and **lock** the system.
6. The engine runs for the Turbo Mode runtime.

Note	Turbo Timer must be turned on by an authorized Directed dealer.

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Remote Start Faults

For user safety, the system must be properly configured or remote start will not activate. A Remote Start Fault may be caused by any of several configuration issues. Refer to the table below for the command type and parking light flashes that will identify the configuration issue and solution.

Flashes *	Possible Fault	Solution
5	Brake on	Release foot brake
6	Hood open	Close hood
7	After performing Remote Start command - MTS not enabled	Enable MTS mode
	After performing Timer Start or Smart Start command	Check all Solutions
8	Toggle Switch off	Turn switch on

* Refers to the number of parking light flashes.

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Remote and System Operations

Passive Locking*

Park and exit the vehicle, after the doors are closed the Passive locking countdown begins. The led flashes quickly and upon reaching 20 seconds the siren then chirps once. At 30 seconds the system activates itself.

Anytime before the system locks you can re-enter the vehicle or open the trunk to load or unload items and, after closing passive locking resumes.

To stay secure in case of accidental unlocking the system, if a door is not opened within 30 seconds the system reactivates itself and locks the doors.

Auto Re-locking*

Auto re- ensures the vehicle stays locked if it is not entered after unlocking by remote control. After unlocking by remote, the system automatically re-locks the doors (if programmed on) in 30 seconds. Open any point of entry to stop the re-lock until the next unlock by remote.

Onetime Bypass*

Turn the ignition On for one to three seconds and then Off. The horn honks once to confirm one-time bypass is enabled.

One-time bypass can be used to temporarily bypass the Passive locking operation for one cycle. It also bypasses the comfort closure and auxiliary channel outputs if programmed to activate when locking. After the next unlock, all operations return to normal.

* The optional horn honk feature must be installed.

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Valet Mode

Valet mode can be entered and exited by performing the Remote Valet command or manually using the vehicle key and the control button.

Use the following steps to manually enter and exit Valet Mode:

1. **Turn** the ignition switch On and then Off
2. Immediately **press** and **release** the control button once
3. The control center LED turns On when entering and Off when exiting.

Power Save

To reduce power consumption the control center status LED modifies its output if the vehicle is parked for an extended period. If Locked the flashing is reduced after 24 hours. When Valet mode is On the LED turns off after 1 hour and resets each time the ignition is turned off.

Rapid Resume

If power is ever disconnected by a mechanic or thief, the system will resume the state it was in at the time of disconnection, when power is reconnected.

Car Select

Car 2 remote control option must first be turned On (See *Remote Control Configuration* section to turn on). **Press** and **hold** the ***f*** button for 3 seconds. The LED flashes once or twice to indicate the selected Car is 1 or 2, **release** the button for Car Select or continue to **hold** for programming.

Release the ***f*** button, then **press** and **release** while the LED flashes continue to perform Car Select. Once the car is selected a command can be performed by pressing one of the command buttons.

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System Expansion Options

Controlling two vehicles (Car Select)

The remote controls can control systems in two different vehicles saving the need for multiple remote controls. This feature also allows for customized system configurations on each vehicle that has more than one driver. See *Owner Recognition* for details.

Owner recognition *

The system can be configured to recognize the remote used when unlocking and change selected features to match the remote users preferences. Memory seat adjustment, horn honks, passive locking, remote button auto unlocking, horn output duration can all be custom set for each remote user at the time of installation.

Comfort closure *

Comfort Closure emulates turning the key in the door cylinder or holding the lock button of an OEM keyless entry. It will automatically close the windows and sunroof on vehicles with this type of OEM convenience feature.

Driver door priority unlocking *

The door unlocking operation can be configured to emulate an OEM style of driver priority unlocking for added protection during unocking.

* These features must be turned on by an authorized Directed dealer.

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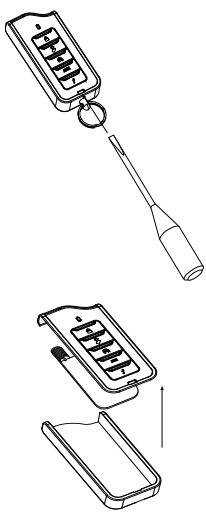
Battery Information

The remote controls are powered by 1 coin cell battery (CR-2032) that can be purchased at most retailers. When the battery begins to weaken, the operating range will be reduced. The information and precautions in this section can help maximize your battery's life and usage in providing you with many years of trouble free operation.

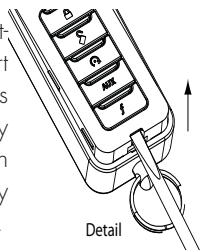
Low Battery Alerts

When unlocking the system using a remote with a low battery the horn emits one additional honk as an alert. If confirmation honks are programmed off, the system will still emit one honk as an alert when unlocking. The optional horn honk feature must be installed.

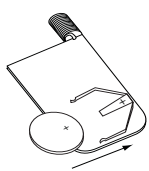
Battery Replacement



1. Using a small slotted screwdriver, insert into slot located as shown and carefully pry the front of the unit open until front is completely separated from housing.



2. Turn both the unit front and circuit board over, remove battery from clip and replace.



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Note	Verify that the battery ploarity is correct when replacing.

3. With the front and circuit board stil turned over, turn back portion of unit onto both parts, reposition all parts and snap together.

Battery Disposal

Directed Electronics cares about the environment. If you need to dispose of the battery, please do so in accordance with your municipal requirements for battery disposal or return to Directed Electronics at: One Viper way, Vista, CA 92081 (Shipping and/or handling costs are the sole responsibility of the owner/sender and will not be covered by Directed Electronics).

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Glossary of Terms

Document Terminology	
Control Module	The "brain" of your system. Usually hidden underneath the dash area of the vehicle. It houses the microprocessor which monitors your vehicle and controls all of the system's functions.
Remote Control	A hand-held, remote control which operates the various functions of your system.
Control Center	The control center contains the system's radio-frequency antenna, the control button, and the Status LED. For maximum remote-control range, the control center is usually located at the top of the windshield, centered near the rear-view mirror.
Status LED	A light used to indicate the status of your system. It is located on your system's Control Center.
Control Button	A small push button located on your system's control center. It is used to override (disarm) the alarm when a remote is not available or to enter or exit Valet Mode.

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Government Regulations

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesirable operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

This device complies with the Industry Canada Radio Standards Specification RSS 210. Its use is authorized only on a no-interference, no-protection basis; in other words, this device must not be used if it is determined that it causes harmful interference to services authorized by IC. In addition, the user of this device must accept any radio interference that may be received, even if this interference could affect the operation of the device.

WARNING! Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

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Warning! Safety First

⚠ Please read the safety warnings below before proceeding. Improper use of the product may be dangerous or illegal.

Installation

Due to the complexity of this system, installation of this product must only be performed by an authorized Directed dealer. If you have any questions, ask your retailer or contact Directed directly at 1-800-753-0600.

Remote Start Capable

When properly installed, this system can start the vehicle via a command signal from the remote control transmitter. Therefore, never operate the system in an enclosed area or partially enclosed area without ventilation (such as a garage). When parking in an enclosed or partially enclosed area or when having the vehicle serviced, the remote start system must be disabled using the installed menu wheel. It is the user's sole responsibility to properly handle and keep out of reach from children all remote control transmitters to assure that the system does not unintentionally remote start the vehicle. THE USER MUST INSTALL A CARBON MONOXIDE DETECTOR IN OR ABOUT THE LIVING AREA ADJACENT TO THE VEHICLE. ALL DOORS LEADING FROM ADJACENT LIVING AREAS TO THE ENCLOSED OR PARTIALLY ENCLOSED VEHICLE STORAGE AREA MUST AT ALL TIMES REMAIN CLOSED. These precautions are the sole responsibility of the user.

Manual Transmission Vehicles

Remote starters on manual transmission vehicles operate differently than those with automatic transmission because you must leave your car in neutral. You must read this Owner's Guide to familiarize yourself with the proper procedures regarding manual transmission remote starters. If you have any questions, ask your authorized Directed dealer or contact Directed at 1-800-753-0600.

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Before remote starting a manual transmission vehicle, be sure to:

- Leave the vehicle in neutral and be sure no one is standing in front or behind the vehicle.
- Only remote start on a flat surface
- Have the parking brake fully engaged

WARNING! It is the responsibility of the owner to ensure the parking/emergency brake properly functions. Failure to do so can result in personal injury or property damage. We recommend the owner have the parking / emergency brake system inspected and adjusted by a qualified automotive shop biannually.

Use of this product in a manner contrary to its intended mode of operation may result in property damage, personal injury, or death. (1) Never remotely start the vehicle with the vehicle in gear, and (2) Never remotely start the vehicle with the keys in the ignition. The user must also have the neutral safety feature of the vehicle periodically checked, wherein the vehicle must not remotely start while the car is in gear. This testing should be performed by an authorized Directed dealer in accordance with the Safety Check outlined in the product installation guide. If the vehicle starts in gear, cease remote start operation immediately and consult with the authorized Directed dealer to fix the problem.

After the remote start module has been installed, contact your authorized dealer to have him or her test the remote start module by performing the Safety Check outlined in the product installation guide. If the vehicle starts when performing the Neutral Safety Shutdown Circuit test, the remote start unit has not been properly installed. The remote start module must be removed or the installer must properly reinstall the remote start system so that the vehicle does not start in gear. All installations must be performed by an authorized Directed dealer.

OPERATION OF THE REMOTE START MODULE IF THE VEHICLE STARTS IN

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GEAR IS CONTRARY TO ITS INTENDED MODE OF OPERATION. OPERATING THE REMOTE START SYSTEM UNDER THESE CONDITIONS MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY. YOU MUST IMMEDIATELY CEASE THE USE OF THE UNIT AND SEEK THE ASSISTANCE OF AN AUTHORIZED Directed DEALER TO REPAIR OR DISCONNECT THE INSTALLED REMOTE START MODULE. DIRECTED WILL NOT BE HELD RESPONSIBLE OR PAY FOR INSTALLATION OR REINSTALLATION COSTS.

This product is designed for fuel injected vehicles only. Use of this product in a standard transmission vehicle must be in strict accordance with this guide.

This product should not be installed in any convertible vehicles, soft or hard top with a manual transmission. Installation in such vehicles may pose certain risk.

Interference

All radio devices are subject to interference which could affect proper performance.

Upgrades

Any upgrades to this product must be performed by an authorized Directed dealer. Do not attempt to perform any unauthorized modifications to this product.

Water/Heat Resistance

This product is not designed to be water and/or heat-resistant. Please take care to keep this product dry and away from heat sources. Any damage from water or heat will void the warranty.

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Limited lifetime consumer warranty

Directed Electronics. ("Directed") promises to the original purchaser to repair or replace (at Directed's election) with a comparable reconditioned model any Directed unit (hereafter the "unit"), excluding without limitation the siren, the remote transmitters, the associated sensors and accessories, which proves to be defective in workmanship or material under reasonable use during the lifetime of the vehicle provided the following conditions are met: the unit was purchased from an authorized Directed dealer, the unit was professionally installed and serviced by an authorized Directed dealer; the unit will be profession¬ally reinstalled in the vehicle in which it was originally installed by an authorized Directed dealer; and the unit is returned to Directed, shipping prepaid with a legible copy of the bill of sale or other dated proof of purchase bearing the following information: consumer's name, telephone number and address; the authorized dealers name, telephone number and address; complete product description, including accessories; the year, make and model of the vehicle; vehicle license number and vehicle identification number. All components other than the unit, including without limitation the siren, the remote transmitters and the associated sensors and accessories, carry a one-year warranty from the date of purchase of the same. ALL PRODUCTS RECEIVED BY DIRECTED FOR WARRANTY REPAIR WITHOUT PROOF OF PURCHASE FROM AN AUTHORIZED DEALER WILL BE DENIED. This warranty is non-transferable and is automatically void if: the unit's date code or serial number is defaced, missing or altered; the unit has been modified or used in a manner contrary to its intended purpose; the unit has been damaged by accident, unreasonable use, neglect, improper service, installation or other causes not arising out of defects in materials or construction. The warranty does not cover damage to the unit caused by installation or removal of the unit. Directed, in its sole discretion, will determine what constitutes excessive damage and may refuse the return of any unit with excessive damage. TO THE MAXIMUM EXTENT ALLOWED BY LAW, ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, ARE EXPRESSLY EXCLUDED; AND DIRECTED NEITHER ASSUMES NOR AUTHORIZES ANY PERSON OR ENTITY TO ASSUME FOR IT ANY DUTY, OBLIGATION OR LIABILITY IN CONNECTION WITH ITS PRODUCTS. DIRECTED DISCLAIMS AND HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING ITS AUTHORIZED DEALERS OR INSTALLERS. DIRECTED SECURITY SYSTEMS, INCLUDING THIS UNIT, ARE DETERRENTS AGAINST POSSIBLE THEFT. DIRECTED IS NOT OFFERING A GUARANTEE OR INSURANCE AGAINST VANDALISM, DAMAGE OR THEFT OF THE AUTOMOBILE, ITS PARTS OR CONTENTS; AND HEREBY EXPRESSLY DISCLAIMS ANY LIABILITY WHATSOEVER, INCLUDING WITHOUT LIMITATION, LIABILITY FOR THEFT, DAMAGE AND/OR VANDALISM. THIS WARRANTY DOES NOT COVER LABOR COSTS FOR MAINTENANCE, REMOVAL OR REINSTALLATION OF THE UNIT OR

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ANY CONSEQUENTIAL DAMAGES OF ANY KIND. IN THE EVENT OF A CLAIM OR A DISPUTE INVOLVING DIRECTED OR ITS SUBSIDIARY, THE VENUE SHALL BE SAN DIEGO COUNTY IN THE STATE OF CALIFORNIA. CALIFORNIA STATE LAWS AND APPLICABLE FEDERAL LAWS SHALL APPLY AND GOVERN THE DISPUTE. THE MAXIMUM RECOVERY UNDER ANY CLAIM AGAINST DIRECTED SHALL BE STRICTLY LIMITED TO THE AUTHORIZED DIRECTED DEALER'S PURCHASE PRICE OF THE UNIT. DIRECTED SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, ANY CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, DAMAGE TO VEHICLE, DAMAGES FOR THE LOSS OF TIME, LOSS OF EARNINGS, COMMERCIAL LOSS, LOSS OF ECONOMIC OPPORTUNITY AND THE LIKE. NOTWITHSTANDING THE ABOVE, THE MANUFACTURER DOES OFFER A LIMITED WARRANTY TO REPLACE OR REPAIR THE CONTROL MODULE SUBJECT TO THE CONDITIONS AS DESCRIBED HEREIN. THIS WARRANTY IS VOID IF THE UNIT HAS NOT BEEN PURCHASED FROM DIRECTED, OR AN AUTHORIZED DIRECTED DEALER, OR IF THE UNIT HAS BEEN DAMAGED BY ACCIDENT, UNREASONABLE USE, NEGLIGENCE, ACTS OF GOD, NEGLECT, IMPROPER SERVICE, OR OTHER CAUSES NOT ARISING OUT OF DEFECT IN MATERIALS OR CONSTRUCTION.

Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights and you may also have other rights that vary from State to State.

This warranty is only valid for sale of product(s) within the United States of America and in Canada. Product(s) sold outside of the United States of America or Canada are sold "AS-IS" and shall have NO WARRANTY, express or implied.

For further details relating to warranty information of Directed products, please visit the support section of Directed's website at: www.directed.com

This product may be covered by a Guaranteed Protection Plan ("GPP"). See your authorized Directed dealer for details of the plan or call Directed Customer Service at 1-800-876-0800.

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Models
Viper 4104
Clifford 410.4X
Python 414
Keyless Entry and Remote Start
Installation Guide

This product is intended for installation by a professional installer only! Attempts to install this product by a person other than a trained professional may result in severe damage to a vehicle's electrical system and components.

Directed® ELECTRONICS

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N4104 2011-10

Bitwriter®, Code Hopping™, Doubleguard®, ESP™, Fail-Safe®, Ghost Switch™, Learn Routine™, Nite-Lite®, Nuisance Prevention® Circuitry, Revenger®, Silent Mode™, Soft Chirp®, Stinger®, Valet®, Vehicle Recovery System®, VRS®, and Warn Away® are all Trademarks or Registered Trademarks of Directed Electronics.

The Bitwriter® (p/n 998U) requires chip version 2.7 or newer to program this unit.

Bitwriters with a date code of 6a or older require an IC upgrade (p/n 998M). Some Bitwriters with a date code of 6B do not require the IC upgrade, refer to tech tip # 1112 for more information.

DATA TO DATA™

Contents

Warning! safety first 4
Wiring Diagram 5
Wiring Connections 6
    Main Harness (H1), 6-pin connector 6
    Auxiliary/Shutdown Harness (H2), 24-pin connector 6
    Remote Start (H3), 8-pin connector 7
    Door Lock, 3-pin connector 7
Initializing Virtual Tach (not needed w/hardwire tach inputs) 7
Learning the Tach (not needed with Virtual Tach) 7
Neutral safety switch interface 8
    Testing the neutral safety switch 8
Remote Start Shutdown/Startup Diagnostics 8
Remote Pairing 9
Programming System Features 10
Feature Menus 11
    Menu 1 - Vehicle integration 11
    Menu 2 - Convenience 13
    Menu 3 - Remote start 15
Bitwriter - Only Options 17
Basic Remote Functions 19
Reset and Deletion 19
Troubleshooting: Keyless Entry 20
Troubleshooting: Remote Start 20

Warning! safety first

⚠ The following safety warnings must be observed at all times:

- Due to the complexity of this system, installation of this product must only be performed by an authorized Directed Electronics dealer.
- When properly installed, this system can start the vehicle via a command signal from the remote control. Therefore, never operate the system in an area that does not have adequate ventilation.

The following precautions are the sole responsibility of the user; however, authorized Directed Electronics dealers should:

- Never use a test light or logic probe when installing this unit. Always use a multimeter.
- Never operate the system in an enclosed or partially enclosed area without ventilation (such as a garage).
- When parking in an enclosed or partially enclosed area or when having the vehicle serviced, the remote start system must be disabled using the installed toggle switch. It is the user's sole responsibility to properly handle and keep out of reach from children all remote controls to assure that the system does not unintentionally remote start the vehicle.
- USER MUST INSTALL A CARBON MONOXIDE DETECTOR IN OR ABOUT THE LIVING AREA ADJACENT TO THE VEHICLE. ALL DOORS LEADING FROM ADJACENT LIVING AREAS TO THE ENCLOSED OR PARTIALLY ENCLOSED VEHICLE STORAGE AREA MUST REMAIN CLOSED AT ALL TIMES.

Use of this product in a manner contrary to its intended mode of operation may result in property damage, personal injury, or death. Except when performing the Safety Check outlined in this installation guide, (1) Never remotely start the vehicle with the vehicle in gear, and (2) Never remotely start the vehicle with the keys in the ignition. The user is responsible for having the neutral safety feature of the vehicle periodically checked, wherein the vehicle must not remotely start while the car is in gear. This testing should be performed by an authorized Directed Electronics dealer in accordance with the Safety Check outlined in this product installation guide. If the vehicle starts in gear, cease remote start operation immediately and consult with the user to fix the problem immediately.
After the remote start module has been installed, test the remote start module in accordance with the Safety Check outlined in this installation guide. If the vehicle starts when performing the Neutral Safety Shutdown Circuit test, the remote start unit has not been properly installed. The remote start module must be removed or properly reinstalled so that the vehicle does not start in gear. All installations must be performed by an authorized Directed Electronics dealer.

OPERATION OF THE REMOTE START MODULE IF THE VEHICLE STARTS IN GEAR IS CONTRARY TO ITS INTENDED MODE OF OPERATION. OPERATING THE REMOTE START SYSTEM UNDER THESE CONDITIONS MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY. IMMEDIATELY CEASE THE USE OF THE UNIT AND REPAIR OR DISCONNECT THE INSTALLED REMOTE START MODULE. DIRECTED ELECTRONICS WILL NOT BE HELD RESPONSIBLE OR PAY FOR INSTALLATION OR REINSTALLATION COSTS.

Remote starters for manual transmission pose significant risks if not properly installed and operated. When testing to ensure the installation is working properly, only remote start the vehicle in neutral gear, on a flat surface and with a functional, fully engaged parking brake. Do not allow anyone to stand in front of or behind the vehicle.
This product should **not** be installed in any convertible vehicles, soft or hard top with a manual transmission. Installation in such vehicles may pose certain risk.

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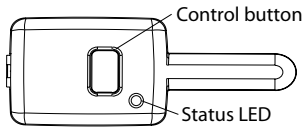
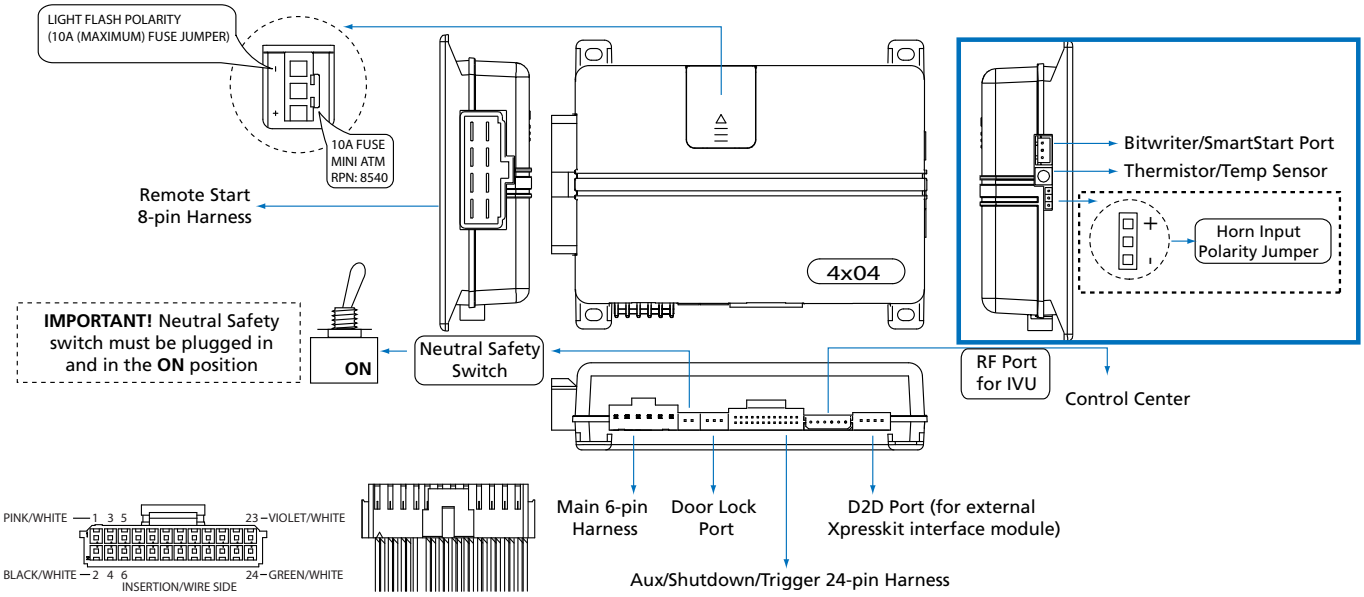
Wiring Diagram



Control Center 6111T



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Wiring Connections

Main Harness (H1), 6-pin connector

H1/1	RED	(+)12VDC CONSTANT INPUT
H1/2	BLACK	(-) CHASSIS GROUND
H1/3	BROWN	(-) 200mA HORN HONK OUTPUT
H1/4	WHITE/BROWN	LIGHT FLASH ISOLATION WIRE - PIN 87a light flash relay
H1/5	WHITE	PIN 30 of LIGHT FLASH RELAY
H1/6	ORANGE	500 mA GROUND WHEN ARMED OUTPUT

Auxiliary/Shutdown Harness (H2), 24-pin connector

H2/1	PNK/WHITE	(-) 200mA FLEX RELAY CONTROL OUTPUT
H2/2	BLACK/WHITE	(-) NEUTRAL SAFETY INPUT
H2/3	BLUE/WHITE	(-) 200mA 2ND STATUS /REAR DEFOGGER OUTPUT
H2/4	GREEN/BLACK	(-) 200mA FACTORY ALARM DISARM OUTPUT
H2/5	RED/WHITE	(-) 200mA TRUNK RELEASE OUTPUT
H2/6	GREEN	(-) DOOR INPUT*
H2/7	BLACK/YELLOW	(-) 200mA DOME LIGHT OUTPUT
H2/8	EMPTY	----------
H2/9	DARK BLUE	(-) 200mA STATUS OUTPUT
H2/10	PINK	(-) 200mA IGNITION 1 OUTPUT
H2/11	WHITE/BLACK	(-) 200mA AUX 3 OUTPUT
H2/12	VIOLET	(+) DOOR INPUT
H2/13	WHITE/VIOLET	(-) 200mA AUX 1 OUTPUT
H2/14	VIOLET/BLACK	(-) 200mA AUX 2 OUTPUT
H2/15	ORANGE/BLACK	(-) 200mA AUX 4 OUTPUT
H2/16	BROWN	(+) BRAKE SHUTDOWN INPUT
H2/17	GRAY	(-) HOOD PIN INPUT (NC OR NO)
H2/18	VIOLET/YELLOW	(-) 200mA STARTER OUTPUT
H2/19	BLUE**	FACTORY HORN INPUT (Use Jumper to set polarity)
H2/20	GRAY/BLACK	(-) DIESEL WAIT TO START INPUT
H2/21	WHITE/BLUE	ACTIVATION INPUT
H2/22	ORANGE	(-) 200mA ACCESSORY OUTPUT
H2/23	VIOLET/WHITE	TACHOMETER INPUT
H2/24	GREEN/WHITE	(-) 200mA FACTORY ALARM ARM OUTPUT

*The Normally Closed setting will only work if one of the vehicle's doors is connected. If more than one door is to be monitored, then it is recommended to use the Xpresskit DTIMAZDA or tech tip # 1921 on www.directechs.com to interface with these types of vehicles.

**This optional input can be connected to the horn circuit (+ or -). When this wire receives input for a minimum of .5 seconds, the system reports a trigger on the 2-way remote. This is useful on vehicles that have a factory security system that can be armed/disarmed with the Directed system. This system will not report that a zone has been triggered when unlocking with the 2-way remote. This feature is not available on the 1-way remote.

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Remote Start (H3), 8-pin connector

H3/1	PINK	(+) IGNITION 1 INPUT/OUTPUT
H3/2	RED/WHITE	+12V FUSED (30A) IGNITION 2/FLEX RELAY INPUT
H3/3	ORANGE	(+) ACCESSORY OUTPUT
H3/4	VIOLET	(+) STARTER OUTPUT
H3/5	RED	+12V FUSED (30A) IGNITION 1 INPUT
H3/6	PINK/WHITE	IGNITION 2/FLEX RELAY OUTPUT
H3/7	PINK/BLACK	FLEX RELAY INPUT 87a (IF REQUIRED) OF FLEX RELAY
H3/8	RED/BLACK	+12V FUSED (30A) ACCESSORY/STARTER INPUT

Door Lock, 3-pin connector

1	BLUE	(-) 500mA UNLOCK OUTPUT
2	EMPTY	NOT USED
3	GREEN	(-) 500mA LOCK OUTPUT

Initializing Virtual Tach (not needed w/hardwire tach inputs)

To program Virtual Tach:

1. After the install is complete, remote start the engine. The programming operation may require 3 cranks of the starter before the engine starts and runs. Do not turn off the remote start if this happens, it is a normal programming operation.
2. Once the engine begins running, let it run for at least 30 seconds.
3. Using the Remote, send the Remote start command to turn remote start off. Virtual Tach is programmed. To reset Virtual Tach, go into the *Reset and Deletion* section of this guide. Virtual Tach cannot be reset with the Bitwriter.

Note: Virtual Tach cannot be used in MTS Manual Transmission Mode. It is also not recommended for diesel trucks.

Virtual Tach handles disengaging the starter motor during remote starting – it does not address over-rev. If the customer wants to have the over-rev protection capability, the tach wire must be connected.

> Important: After successfully learning Virtual Tach, a small minority of vehicle starters may over crank or under crank during remote start. The Bitwriter can be used fine tune the starter output time in 50mS increments to compensate for such an occurrence.

Learning the Tach (not needed with Virtual Tach)

To learn the tach signal:

1. Start the vehicle with the key. Within 5 seconds, press and hold the Control button.
2. After 3 seconds the status LED on your Control Center lights constant when the tach signal is learned.
3. Release the Control button.

Note: When the tachometer is programmed, the main unit automatically enters the Tachometer engine checking mode.

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Neutral safety switch interface

Some vehicles do not have an electrical neutral safety switch. Instead, the vehicle has a mechanical neutral safety switch that physically interrupts the starter wire and is used when the vehicle is in any drive gear. If the remote start is interfaced before this switch, it will provide protection from starting in gear. However, some vehicles combine the column shift mechanism and the mechanical neutral safety switch into one mechanical part.

> Important: You must complete the remote start system installation before doing the following test. Ensure that the remote start system is functioning normally. This includes connecting to the brake as a shut-down.

Testing the neutral safety switch

1. Make sure there is adequate clearance to the front and rear of the vehicle because it may move slightly.
2. Make sure the hood is closed and there are no remote start shut-downs active.
3. Set the emergency brake.
4. Turn the key to the "run" position, this releases the shifter.
5. Place the car in drive (D).
6. Place your foot directly over the brake pedal, but do not depress it. Be ready to step on the brake if the starter engages.
7. Activate the remote start system.
8. If the starter engages, immediately depress the brake to shut the remote start system down. If the starter does not engage, no additional safety system is required.
   If the starter engages and the vehicle is a General Motors product or Dodge Dakota pickup, refer to www.directechs.com for Document 1008 under the Resource tab. For an alternative shut-down method which prevents the starter from engaging. If the vehicle is not a General Motors product or a Dodge Dakota pickup, please call Directed Electronics Technical Support for an alternative shut-down method. Do not return the vehicle to the customer until this feature is properly installed!

Remote Start Shutdown/Startup Diagnostics

Shutdown diagnostics: If the remote start activates but fails to stay running, the remote start module has the ability to inform you of what may have caused the remote start failure. Before performing shutdown diagnostics it is important that you let the remote start shut off on its own i.e. let it attempt to start 3 times then shut down, if this is not done the unit will report the shutdown you used to shut off the remote start.

Note: Shutdown diagnostics does not report if the vehicles factory immobilizer is causing the problem.

To perform shutdown diagnostics:

1. With the ignition Off, press and hold the Control button (on Control Center).
2. Turn the ignition On and then back Off while holding the Control button.
3. Release the Control button.
4. Press and release the Control button. The status LED flashes to report the last shutdown for one minute or until the ignition is turned on, as shown in the following table:

Status LED Flashes	Shutdown Mode
1 flash	Runtime expired
2 flashes	Over-rev shutdown
3 flashes	Low or no RPM
4 flashes	Transmitter shutdown (or optional push button)
5 flashes	(+) Brake shutdown
6 flashes	(-) Hood shutdown
7 flashes	Timer mode/Turbo mode/Manual mode error *
8 flashes	Neutral safety shutdown
9 flashes	Low battery (voltage mode)
11 flashes	Wait-to-start input timed out

* Timer mode error: Ignition is on or shutdown input is active when activating timer mode.
Turbo mode error: Turbo mode is programmed off, engine is not on or shutdown input is active.
Manual mode error: MTS mode not enabled.

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Startup Diagnostics: If the vehicle fails to activate the remote start, the remote start module will flash the parking lights on the vehicle to notify you of what caused the no-start situation.

Parking Light Flashes	
5 flashes	Brake wire is active
6 flashes	Hood pin wire is active
7 flashes	Manual transmission mode is enabled and not initialized.
8 flashes	Neutral safety wire has no ground or the neutral safety switch is Off.

Remote Pairing

Prepare the vehicle system to be Paired with a new remote

1. Turn the key to the ON position.
2. Within 5 seconds press and release the Control button on the system's Control Center one time.
3. Within 5 seconds, press and hold the Control button on the Control Center. The status LED will flash one time and the horn honks and the LED flashes to confirm the vehicle is ready for remote pairing.
4. Release the Control button and proceed below.

Note: If no remote pairing results, the system will exit after 60 seconds.

Prepare the 1-way remote control to be Paired with the system:

Make sure the remote is set for the desired Car 1 (Default) or Car 2 operation for the system it will be paired with.

1. Press and hold the ƒ button for 8 seconds.
   Note: If Car 2 mode is on, ignore the Car Select indicator after 3 seconds.
2. Wait for the Transmit LED to light solid. Release the ƒ button.
3. Press the button for 1 second. The transmit LED will blink 3 times.
4. Within 5 seconds, press the button.
5. The vehicle horn will honk. You have now successfully learned the remote to the vehicle remote start and keyless entry system.
6. Press the ƒ button two times to exit learn routine on the remote. The transmit LED will turn off when exiting.

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Programming System Features

The System Features Learn Routine dictates how the unit operates. It is possible to access and change most of the feature settings using the Control button.

1. Turn the ignition on, then off.
2. Select a Menu. Press and hold the Control button. The number of LED flashes and horn honks indicates the menu number. 1 LED flash and honk indicates menu 1, 2 LED flashes and honks - menu 2 and 3 LED flashes and honks for menu 3.
3. When the desired menu LED flashes and honks are observed, release the Control button.
4. Select a Feature. Press and release the Control button the number of times corresponding to the feature you wish to change. Then press and hold one more time to select the features.
5. Program the Feature. While holding the Control button, you can program the feature using the remote control.

For features with only two options; = option 1 while = option 2.
For features with more than two options; selects the options in ascending order, while selects them in descending order.

Note: Pressing button resets the feature to the factory default.

Once a feature is programmed:
- Other features can be programmed within the same menu
- Another menu can be selected
- The learn routine can be exited if programming is complete

To access another feature in the same menu:
1. Press and release the Control button the number of times necessary to advance from the feature you just programmed to the next one you want to program.
2. Then press the Control button once more and hold it.

To select another menu:
1. Press and hold the Control button.
2. After 3 seconds, the unit advances to the next menu and the LED flashes and the horn honks, indicating which menu has been accessed.

The learn routine exits if any of the following occurs:
- The ignition is turned On
- There is no activity for 30 seconds
- The Control button is pressed too many times

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Feature Menus

Default settings are Opt. 1 (in bolder type). New features are bold with grey background.

Menu 1 - Vehicle integration

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	System Locking Mode	Active Locking	Passive Locking	Auto Re-locking*		
2	Panic Mode	On	Ign Off only	Off		
3	Horn Function	Confirmation Honk (20 ms) & Panic	Confirmation Honk (30 ms) & Panic	Confirmation Honk (40 ms) & Panic	Confirmation Honk (50 ms) & Panic	Confirmation Honk Off - Panic Only (Pulsed)
4	Ign-controlled locks	No Ign- locking	Lock & Unlock	Lock Only	Unlock Only	
5	Door Lock Pulses	Single	Double Unlock Only	Double Lock Only	Double Lock & Unlock	
6	Door Lock output duration	0.8 sec.	3.5 sec.	0.4 sec.		
7	2nd Unlock	2nd unlock on/ Ign-control after first unlock	2nd unlock on/ Ign-control with first unlock			
8	Comfort Closure	No Comfort Closure	Comfort Closure 1	Comfort Closure 2		
9	Hood Switch Type	Normally Open	Normally closed			
10	Door Switch Type	Normally Open	Normally Closed			
11	Remote Button unlock (Ign off)**	On	Off			

* The Green H2/6 or the Violet H2/12 wire must be connected to enable this feature.
** Not available with 1-way remote.

1. System Locking mode
    1. Active: the transmitter must be used to lock the system
    2. Passive Locking: after exiting the vehicle the system will automatically lock the doors
    3. Auto re-locking: if the vehicle is not entered after receiving a unlock command, the system will automatically re-lock the doors

2. Panic Mode
    1. On: the Panic output can be activated at any time
    2. Ign Off Only : the Panic output can be activated only when the ignition is off
    3. Off: the Panic output is defeated

3. Horn Duration
    1. - Opt 4. 20 - 50 sec: sets the horn output duration with Panic mode at 30 seconds
    2. Off: turns the horn output off and with Panic mode at 60 seconds

4. Ign-controlled Locks
    1. No Ign-locking: the door lock/unlock outputs will not activate when ignition is turned on/off
    2. Lock & Unlock: the door lock & unlock output will activate when ignition is turned on & off
    3. Lock Only: the door lock output will activate when ignition is turned on
    4. Unlock Only: the door unlock output will activate when ignition is turned off

5. Door Lock Pulses
    1. Single: the door lock & unlock outputs will pulse once
    2. Double Unlock only: the unlock output only will pulse twice

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3. Double Lock Only: the lock output only will pulse twice
4. Double Lock & Unlock: the lock & unlock outputs will pulse twice

6. Door Lock Output Duration
    1. 0.8sec.: the door lock output pulses will be 800mS in duration
    2. 3.5sec.: the door lock pulses will be 3.5 seconds in duration
    3. 0.4 sec.: the door lock pulses will be 400mS in duration

7. Ignition Controlled 2nd Unlock
    1. After first unlock: for Ign-controlled unlocking, the 2nd unlock will activate 800mS after the first (driver door) unlock
    2. With first unlock: for Ign-controlled unlocking, the 2nd unlock will activate at the same time as the first (driver door) unlock

8. Comfort Closure
    1. No comfort Closure: Comfort Closure is defeated when locking
    2. Comfort Closure 1: the door lock pulse (or 2nd pulse for double pulses) will remain on for 20 seconds.
    3. Comfort Closure 2: 800mS following the end of the door lock pulse (or 2nd pulse for double pulses); the door lock output will turn on again for 20 seconds.

9. Hood Switch Type
    1. Normally Open: for vehicles with a hood switch that rests at ground when the hood is OPEN
    2. Normally Closed: for vehicles with a hood switch that rests at ground when the hood is CLOSED

10. Door Switch Type
    1. Normally Open: for vehicles with door switches that rest at ground when the door is OPEN
    2. Normally Closed: for vehicles with door switches that rest at ground when the door is CLOSED

11. Remote Button Unlock (Ign off)
    1. On: a message telling the remote control to unlock the keypad is sent each time the vehicle ignition is turned off
    2. Off: no message is sent

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Menu 2 - Convenience

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	One-time Bypass	No Bypass	Bypass			
2	Override Pulse Count	1	2	3	4	5
3	Door Open Error chirp*	On	Off			
4	Ign-controlled Dome light	On	Off			
5	OEM Alarm Disarm w/Aux/ trunk	On	Off			
6	OEM Alarm Disarm Output	With Unlock	Before Unlock	Remote Start Only		
7	OEM Alarm Disarm Pulses	1	2			
8	Aux 1 Output type	Validity	Latch	Latch/reset/ ign	Timed	Off (5)/2nd Unlock (6)
9	Aux 1 Linking	No Linking	Link to Lock	Link to Unlock	Link to Lock/ Unlock	Link to Remote Start only
10	Aux 2 Output type	Validity	Latch	Latch reset/ign	Timed	Off (5)/2nd unlock (6)
11	Aux 2 Linking	No Linking	Link to Lock	Link to Unlock	Link to Lock/ Unlock	Link to Remote Start only
12	Aux 3 Output type	Validity	Latch	Latch reset/ign	Timed	Off (5)/2nd unlock (6)
13	Aux 3 Linking	No Linking	Link to Lock	Link to Unlock	Link to Lock/ Unlock	Smart Key Control (Link to Remote Start Off)*
14	Aux 4 Output Type	Validity	Latch	Latch reset/ign	Timed	Off (5)/2nd Unlock (6)
15	Aux 4 Linking	No linking	Link to Lock	Link to Unlock	Link to Lock/ Unlock	Link to Remote Start Only
16	Aux/Trunk Output type	Validity	Off	2nd unlock		

* The Green H2/6 or the Violet H2/12 wire must be connected to enable this feature.

1. One-time Bypass
    1. Off: One-Time Bypass is not available
    2. On: the One-Time Bypass feature will defeat Passive Locking once and, if Locked by remote control, will defeat Comfort Closure and Aux outputs linked to Locking
2. Override Pulse Count

- 1-5: sets the number of presses (1-5) on the Control Button required to override the alarm system

3. Door Open Error chirp
    1. On: if the door trigger is active when locking, the horn will emit a honk and a message will be sent to the 2way remote control as an alert
    2. Off: an active door trigger when locking will not create an alert output

4. Ign-controlled Dome light
    1. On: the dome light output will activate when the ignition is turned off
    2. Off: the dome light output will not activate when the ignition is turned off

5. OEM Alarm Disarm w/Aux/Trunk (H2/4 wire)
    1. On: the OEM Alarm Disarm wire will pulse as programmed when the Aux/Trunk output is activated
    2. Off: the OEM Alarm Disarm wire will not pulse when the Aux/Trunk output is activated

6. OEM Alarm Disarm Output (H2/4 wire)
    1. With Unlock: the OEM Alarm Disarm wire will pulse as programmed at the same time as the unlock (Blue) wire

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2. Before Unlock: the OEM Alarm Disarm wire will pulse as programmed before the unlock wire
3. Remote start only: the OEM Alarm Disarm wire will pulse as programmed during remote start only

7. OEM Alarm Disarm Pulses (H2/4 wire)
   1. 1: the OEM Alarm Disarm wire will pulse once per operation
   2. 2: the OEM Alarm Disarm wire will pulse twice per operation

8. Aux 1 Output Type (H2/4 wire)
   1. Validity: when the Aux command is received the wire will turn on and remain on until the command ceases
   2. Latch: when the Aux command is received the wire will turn on and remain on until the command is received again
   3. Latch/reset/Ignition: when the Aux command is received the wire will turn on and remain on until the command is received again or the ignition is turned on/off
   4. Timed: when the Aux command is received the wire will turn on for the programmed time duration (default 30sec)
   5. Off: the output will not activate for a remote control command, use this option when the Aux command controls an external device such as a garage door module
   6. 2nd unlock: the wire will operate as 2nd unlock and will not activate for remote control commands

9. Aux 1 Linking
   1. No Linking: the Aux output will not activate for a remote control command
   2. Link to Lock: the Aux output will activate for the Lock command
   3. Link to Unlock: the Aux output will activate for the Unlock command
   4. Link to Lock/Unlock: the Aux output will activate for the Lock & Unlock commands
   5. Link to Remote Start: the Aux output will activate for any Remote Start activation

10. Aux 2 Output Type
    - Refer to Aux 1 Output Type descriptions

11. Aux 2 Linking
    - Refer to Aux 1 Linking descriptions

12. Aux 3 Output Type
    - Refer to Aux 1 Output Type descriptions

13. Aux 3 Linking
    - Options 1-4: Refer to Aux 1 Linking descriptions
    - Option 5: SmartKey Control (Link to Remote Start Off): The Aux output will pulse once following Remote Start shut down for vehicles with push button engine stop operations. During runtime, if any door is opened remote start will shut down immediately and pulse the output.

14. Aux 4 Output Type
    - Refer to Aux 1 Output Type descriptions

15. Aux 4 Linking
    - Refer to Aux 1 Linking descriptions

16. Aux/Trunk Output Type
    - Refer to Aux 1 Output Type descriptions

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Menu 3 - Remote start

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	Transmission Mode	Manual*	Automatic			
2	Engine Checking Mode	Virtual Tach	Voltage	Off	Tachometer	
3	Cranking Time	0.6 sec.	0.8 sec.	1.0 sec.	1.2 sec.	1.4 (5)/ 1.6 (6)/ 1.8 (7) 2.0 (8)/ 4.0 (9)
4	Remote Start Runtime	12 min.	24 min.	60 min.		
5	Activation Pulse Count	1	2			
6	Turbo Mode	No Turbo Mode	On-1 min.	On-3 min.	On-5 min.	On- 10 min.
7	Timer Mode Runtime	12 min.	3 min.	6 min.	9 min.	
8	Flex Relay Function	Ignition 2	Accessory 2	Starter 2		
9	Diesel Start Delay	Wait-to Start input	Timed 15 sec.	Timed 30 sec.	Timed 45 sec.	
10	Accessory during Diesel Start Delay	On	Off			
11	Status 2 Output	Status	Latch Rear Defogger	Pulse Rear Defogger		
12	Parking Light Output	Constant	Pulsed	Off		
13	Anti-grind Output	On	Off			
14	Tach Mode Starter Release	Normal	Increase	Decrease		
15	Vehicle Temp Auto Report**	Off	On			
16	Remote Start Safelock	Off	On			

* The H1/6 Violet or the H1/8 Green wire must be connected for this feature.
** Not available with 1-way remote.

1. Transmission Mode
    1. Manual: requires 'Tachometer' for the Engine Checking Mode, and requires the user to successfully perform a procedure when parking the vehicle before remote starter will engage
    2. Automatic: uses any of the Engine Checking Modes and does not require any special procedures when parking

2. Engine Checking Mode
    1. VirtualTach: battery voltage drop/rise during cranking determines when the starter output is released. During runtime, constant voltage level is monitored to determine if the engine is running
    2. Voltage: starter output during cranking is a programmed duration (Set in Cranking Time). During runtime, constant voltage level is monitored to determine if the engine is running
    3. Off: starter output during cranking is a programmed duration (Set in Cranking Time). The remote start will keep the ignition/accessories active for the programmed runtime whether the engine is running or not
    4. Tachometer: tachometer input signal during cranking and runtime to determine when the starter output is released and if the engine is running.

3. Cranking Time
    - 0.6/0.8/1.0/1.2/1.4/1.6/1.8/2.0/4.0 seconds: determines the starter output duration during cranking for the 'Voltage' and the 'Off' Engine Checking Mode options

4. Remote Start Runtime
    - 12/24/60 minutes: sets engine runtime during normal remote start operations

5. Activation Pulse Count
    - 1/ 2 pulses: sets the number of remote control commands received or Activation Input required to

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activate and de-activate remote start

6. Turbo Mode
    1. No turbo Mode: Turbo mode is not available
    2. On – 1/3/5/10 minutes: Turbo Mode is available and, when activated, the engine will run for the duration set per the selected option

7. Timer Mode Runtime
    - 12/3/6/9 minutes: sets the runtime when the engine is started by the Timer Mode and SmartStart features

8. Flex Relay Function
    1. Ignition 2: the relay will emulate the Ignition 1 output during remote start
    2. Accessory 2: the relay will emulate the Accessory 1 output during remote start
    3. Starter 2: the relay will emulate the Starter output during remote start

9. Diesel Start Delay
    1. Wait-to-start input: (-) input on the Grey/black (H2/20) WTS wire will delay the starter output until the ground ceases.
    2. Timed 15/30/45 seconds: delays the starter output per the selected option, the WTS wire does not function.

10. Accessory during Diesel Start Delay
    1. On: the Accessory outputs (H3/3 high current and H2/22 low current) will be ON during diesel start delay
    2. Off: the Accessory outputs (H/3 high current and H2/22 low current) will be OFF during diesel start delay

11. Status 2 Output (Dark Blue H2/9 wire)
    1. Status: the output will activate before the ignition outputs turn on, and de-activate after they turn off during remote start
    2. Latch rear defogger: the output activates 10 seconds after start if the interior temperature is below 55F. It turns off after 10 minutes or upon remote start off
    3. Pulse rear defogger: the output activates (for 800mS) 10 seconds after start if the interior temperature is below 55F.

12. Parking Light Output
    1. Constant: the lights will turn on solid during remote start
    2. Pulsed: the lights will pulse on/off during remote start
    3. Off: the lights will be off during remote start

13. Anti-grind Output
    1. On: the high current starter relay will be activated during remote start as anti-grind protection.
    2. Off: the high current starter relay will not be activated during remote start, no anti-grind protection is available.

14. Tach Mode Starter Release
    1. Normal: the starter output will release normally during cranking (50% of the learned tachometer value)
    2. Increase: the starter output will release later during cranking (at 35% of the learned tachometer value)
    3. Decrease: the starter output will release sooner during cranking (at 35% of the learned tachometer value)

15. Vehicle Temp Auto Report
    1. Off: the report during remote start is defeated
    2. On: the report is sent every 2 minutes during remote start if the temperature has changed (+/-) 1 degree since the last report

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16. Remote start Safelock
    1. Off: the Door lock and Factory Alarm Re-arm outputs will maintain the current status (locked/unlocked) during remote start and after shut down
    2. On: the Door lock and Factory Alarm Re-arm outputs will arm/lock the vehicle during remote start and after shutdown

Bitwriter - Only Options

If programming with the Bitwriter®, the learn routine can be locked or unlocked. If the learn routine has previously been locked, it must be unlocked with Bitwriter® - this cannot be done manually with the Control button.

The Bitwriter® gives you access to a wider range of system options. These features and the adjustments that may be programmed are described in the table below.

Menu Item	Feature	Default	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	Aux/Trunk Icon Type*	Trunk	Window	Sunroof	Audio	Lights/Left dr/Right dr/Rear Hatch
2	Aux 1 Timed Output	30 sec.	Options: 1 to 90 sec.			
3	Aux 1 Icon Type*	Pulsed	Trunk	Window	Sunroof	Audio/Lights/Left dr/Right dr/Rear Hatch/ Timed/Latched
4	Aux 2 Timed Output	30 sec.	Options: 1 to 90 sec.			
5	Aux 2 Icon Type*	Pulsed	Trunk	Window	Sunroof	Audio/Lights/Left dr/Right dr/Rear Hatch/ Timed/Latched
6	Aux 3 Timed Output	30 sec.	Options: 1 to 90 sec.			
7	Aux 3 Icon Type*	Pulsed	Trunk	Window	Sunroof	Audio/Lights/Left dr/Right dr/Rear Hatch/ Timed/Latched
8	Aux 4 Timed Output	30 sec.	Options: 1 to 90 sec.			
9	Diesel Start Delay type (seconds)	15 sec.	Options: 1 to 90 sec.			
10	Timer Mode Runtime (minutes)	12 min.	Options: 1 to 16 min.			
11	Timer Mode Starts	6 starts	Options: 1/2/3/4 to 24 (Starts) in increments of 2			
12	Timer mode intervals (hours)	3 hr.	Options: 1/2/**3**/4 to 24 in 2 hour increments			
13	Smart start low temp	0° (F)	Options: OFF, -20° to 70° in 10° increments			
14	Smart start high temp	100° (F)	Options: OFF, 40° to 130° in 10° increments			
15	Smart start low battery (volts)	10.5V	Options: OFF, 9V to 12.5V in 0.5V increments			
16	Starter Release Fine Tune	6 (normal)	Options: 0 to 20 in increments of 1			
17	Feature Programming	Unlocked	Locked			
18	Transmitter Programming	Unlocked	Locked			
19	Remote Start Runtime	12 min.	Options: 1 to 60 min.			
20	Virtual Tach Fine Tune	Not Initialized	Options: Not initialized, 0 to 1000 in 50 millisecond increments			

* Available only on remotes with display screens

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1. Aux/Trunk Icon Type: sets the name to be displayed in the Text Field when the Aux/Trunk output is activated/de-activated
2. Aux 1 Timed Output: sets the output duration in 1 second intervals up to 90 seconds for Aux 1
3. Aux 1 Icon Type: sets the name to be displayed in the Text Field when the Aux 1 output is activated/de-activated
4. Aux 2 Timed Output: sets the Aux 2 "Timed" output in 1 second intervals up to 90 seconds
5. Aux 2 Icon Type: sets the name to be displayed in the Text Field when the Aux 2 output is activated/de-activated
6. Aux 3 Timed Output: sets the Aux 3 "Timed" output in 1 second intervals up to 90 seconds
7. Aux 3 Icon Type: sets the name to be displayed in the Text Field when the Aux 3 output is activated/de-activated
8. Aux 4 Timed Output: sets the Aux 4 "Timed" output in 1 second intervals up to 90 seconds
9. Diesel Start Delay Timer: sets the delay before engine crank in 1 second intervals up to 90 seconds for diesel engine vehicles
10. Timer Mode Runtime: sets the duration of runtime when the engine is started by the Timer Mode and Smart Start features
11. Timer mode Starts: sets the number of times the engine will be started by the Timer Mode and Smart Start features
12. Timer mode Intervals: sets the number of hours between engine starts by the Timer Mode and Smart Start features
13. Smart Start Low Temperature: sets the low temperature threshold required for Smart Start to start the engine
14. Smart Start High Temperature: sets the high temperature threshold required for Smart Start to start the engine
15. Smart Start Low battery (Volts): sets the low battery level threshold required for Smart Start to start the engine
16. Starter Release Fine Tune: adds or subtracts crank time in Tachometer mode in order to overcome engine types that short crank or over-crank on the first start attempt
17. Feature Programming: locks and unlocks the user's ability to enter the feature menus and manually change the main unit programming using the Control Center
18. Transmitter Programming: locks and unlocks the user's ability to enter the remote control/Reset menu and manually change any functions using the Control Center
19. Remote Start Runtime: sets the duration of runtime when the engine is started by remote command
20. VirtualTach Fine tune: adds or subtracts crank time in VirtualTach mode in order to overcome engine types that short crank or over-crank on the first start attempt

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Basic Remote Functions

See Owner's guide for functionality details on the 1-way remote controls.

Reset and Deletion

If a feature/virtual tach needs to be reset or the remote controls need to be deleted, use the following procedure.

1. Turn the ignition to the ON position (The heavy gauge pink wire must be connected).
2. Within 10 seconds, press and release the Control button: 2 times if you want to delete remotes, 3 times to reset features or 4 times to reset virtual tach. These function steps are described next.

   Step 2:
   Delete remotes: This feature erases all remotes from the memory of the keyless entry system. This is useful in cases when a customer's remote is lost or stolen.
   Note: This does not reset the programmed features of the keyless entry system or reset the Virtual Tach setting.

   Step 3:
   Reset Features: This resets all features of the keyless entry system to the factory default settings.
   Note: This feature does not delete the remotes from the keyless entry system or reset the Virtual Tach setting

   Step 4:
   Virtual Tach Reset: Deletes all previously learned values for Virtual Tach, and on the next remote start sequence the unit begins virtual tach initialization.

   Note: The "Zap" feature on the Bitwriter does not reset the Virtual tach setting.

3. Once you have selected the function step, press the Control button once more and hold it. The LED flashes and the horn honks to confirm the selected functional step. Do not release the Control button
4. While holding the control button, press the 🔒 button on the remote control. The unit honks to confirm that the feature has been successfully reset.

Once the feature is reset, the Control button can be released.

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Troubleshooting: Keyless Entry

System does not Auto re-lock:

1. Is Auto re-locking programmed ON?
2. Are the door inputs connected? Either the H2/6 green or the H2/12 Violet should be connected.

Door locks operate backwards.

- This unit has easily-reversed lock/unlock outputs. Recheck wire connections to see if you have reversed these.

Troubleshooting: Remote Start

The remote will not activate the remote start

1. Check remote startup diagnostics.
2. Is the neutral safety switch plugged in and turned on?
3. If the vehicle has an automatic transmission, make sure the remote start is programmed for Automatic Transmission mode.
4. Is the remote programmed to the system?
5. Can the remote start be activated manually by applying a ground pulse to the H2/21 White/Blue wire?
6. Check the harnesses and their connections. Make sure that the harnesses are completely plugged into the remote start module. Make sure there are good connections to the vehicle wiring.
7. Check voltage and fuses on the main 6-pin harness and on the heavy gauge remote start harness.

The remote start will activate, but the starter never engages.

1. Check for voltage on the purple starter wire two seconds after the remote start becomes active. If there is voltage present, skip to Step 8. If there is not voltage present, advance to Step 2.
2. Check the 30A fuses.
3. If the gray/black wait-to-start wire is detecting ground upon activation, the starter will not crank.
4. Is the tach wire connected? If so disconnect it and remote start the vehicle to see if the purple wire sends out voltage. If you get voltage you will need to go to an alternate tach source, the tach wire you are currently on has a voltage spike upon ignition power up which can cause the remote start to not send out the crank voltage.
5. Is the vehicle a Chrysler or GM with a multiplexed starter wire? The vehicle will not crank if the resistance is incorrect on the multiplexed accessory/starter wire.
6. Is the vehicle a GM? If so the Brown 2nd accessory needs to be powered up on some of the vehicles for the vehicle to crank.
7. If this is a manual transmission vehicle, the clutch will need to be bypassed (see tech tip # 10000 at www.directechs.com)
8. Make sure the purple starter wire is connected on the starter side of the optional starter kill/anti-grind relay.
9. Does the vehicle have an immobilizer? Some immobilizer systems will not allow the vehicle to crank if active.
10. Check connections. The heavy gauge remote start input wires on the heavy gauge 10-pin connector should have a solid connection. “T-taps” or “scotch locks”.

The vehicle starts, but immediately dies.

1. Does the vehicle have an immobilizer? The vehicle’s immobilizer can cut the fuel and/or spark during unauthorized starting attempts.
2. Is the remote start programmed for virtual tach or voltage sense? If so, the crank time may not be set high enough. Voltage sense will not work on some vehicles.
3. Is the remote start in tach mode? If so has the tach been programmed to the system?
4. Check diagnostics. Sometimes a shutdown will become active during cranking or just after cranking.

The vehicle starts, but the starter keeps running.

1. Is the system programmed for engine checking off or virtual tach voltage sense? When programmed for either of these features, the engine cranks for the pre programmed crank time regardless of how

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long it takes for the vehicle to actually start. Adjust to a lower cranking time.
2. Was the Tach Learn successful? The LED must light solid and bright to indicate a successful learn.
3. Make sure that there is a tach signal at the purple/white tach input wire of the remote start. If there is not a tach signal, recheck the connection to the vehicle's tach wire and make sure the wire is not broken or shorted to ground leading to the remote start.
4. Is an ignition or accessory output wire connected to the starter wire of the vehicle? Verify the color of the starter wire in the vehicle and confirm that an ignition or an accessory output is not connected to that wire.

The vehicle starts, but will only run for 10 seconds

1. Is the remote start programmed for voltage sense? If this does not work, a tach wire should be used.
2. Check shutdown diagnostics.

The climate control system does not work while the unit is operating the vehicle.

1. Either the wrong accessory wire is being energized or more than one ignition or accessory wire must be energized in order to operate the climate control system.
2. If the vehicle has an electronic climate control system some will reset when the key is turned off and then back on, unfortunately this is a function of the vehicle and cannot be bypassed.

MTS - Manual Transmission Start diagnostics

When enabling MTS, if you get a failure notification from the remote or the vehicle fails to remain started check for following:

- Tachometer not connected or programmed.
- E-brake not connected to the remote start unit. The black/white H2/12 neutral safety wire must have a ground when the parking brake is set.
- Foot must be off the brake when activating the MTS mode on the remote.
- Is the door open when enabling the MTS mode? If so this would cause the unit to enter Pit Stop Mode and the remote start will continue to run when arming/locking the system.
- Is the door input connected? The system needs to see a door open then close after initiating the remote start.
- Does the vehicle have a delayed dome light? If you are connected to the dome light wire and the dome light is staying on after arming/locking the system, the system can exit the MTS mode.
- Make sure the neutral safety switch is plugged in and turned on.

MTS mode exiting diagnostics:

If the remote start has entered the MTS mode but exits the mode after the system is armed/locked. Check these for possible causes.

- The vehicle door has been opened in your absence.
- Does the vehicle have a delayed dome light circuit or does the dome light come on when the ignition is shut off? If so you may need to go to the independent door inputs of the vehicle.
- If you are connected to the dome light wire in the vehicle and cannot connect the system to the individual door inputs of the vehicle due to it having normally closed door inputs, you can use the Xpresskit DTIMAZDA module or Tech Tip # 1921 at www.directechs.com to interface with these types of circuits.
- The E-brake wire connected to the neutral safety input of the system loses ground when ignition is turned off or after a certain amount of time, with these vehicles unfortunately there is no work-around.
- The E-brake wire connected to the neutral safety input of the system has a poor ground. Clean the contacts on the switch or replace the switch.

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Quick Reference Install Guide

Remote Start w/ Keyless Entry

1-Way Super Code

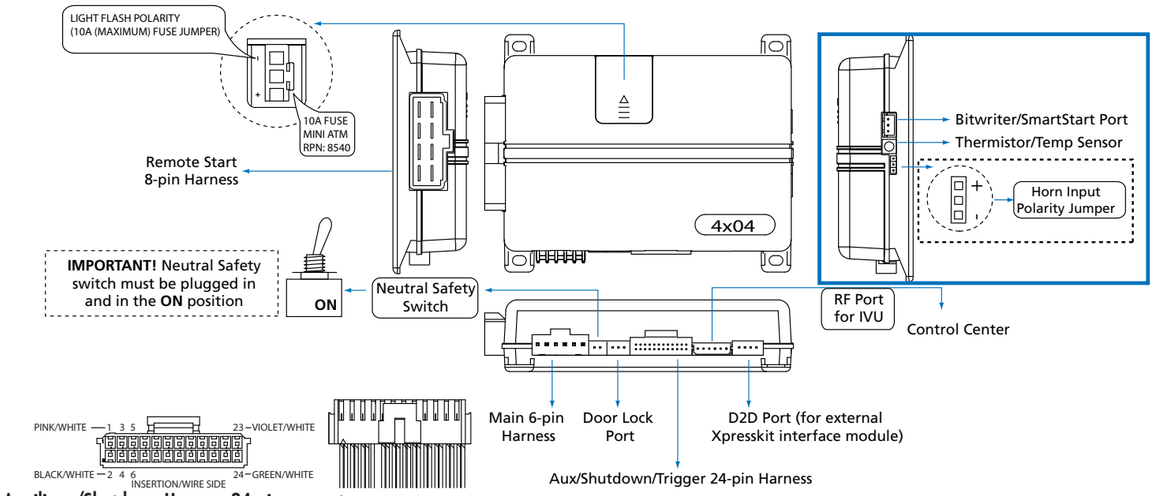
Wiring Connections

Main Harness, 6-pin connector

H/1	RED	(+)12VDC CONSTANT INPUT
H/2	BLACK	(-) CHASSIS GROUND
H/3	BROWN	(-) 200mA HORN HONK OUTPUT
H/4	WHITE/BROWN	LIGHT FLASH ISOLATION WIRE - PIN 87a light flash relay
H/5	WHITE	PIN 30 of LIGHT FLASH RELAY
H/6	ORANGE	500 mA GROUND WHEN ARMED OUTPUT

Door Lock, 3-pin connector

1	BLUE	500mA (-) UNLOCK OUTPUT
2	EMPTY	NOT USED
3	GREEN	500mA (-) LOCK OUTPUT



Auxiliary/Shutdown Harness 24-pin connector

H/1	PNK/WHITE	(-) 200mA FLEX RELAY CONTROL OUTPUT
H/2	BLACK/WHITE	(-) NEUTRAL SAFETY INPUT
H/3	BLUE/WHITE	(-) 200mA 2ND STATUS /REAR DEFOGGER OUTPUT
H/4	GREEN/BLACK	(-) 200mA FACTORY ALARM DISARM OUTPUT
H/5	RED/WHITE	(-) 200mA TRUNK RELEASE OUTPUT
H/6	GREEN	(-) DOOR INPUT
H/7	BLACK/YELLOW	(-) 200mA DOME LIGHT OUTPUT
H/8	EMPTY	----------
H/9	DARK BLUE	(-) 200mA STATUS OUTPUT
H/10	PINK	(-) 200mA IGNITION 1 OUTPUT
H/11	WHITE/BLACK	(-) 200mA AUX 3 OUTPUT
H/12	VIOLET	(+) DOOR INPUT
13	WHITE/VIOLET	(-) 200mA AUX 1 OUTPUT
14	VIOLET/BLACK	(-) 200mA AUX 2 OUTPUT
15	ORANGE/BLACK	(-) 200mA AUX 4 OUTPUT
16	BROWN	(+) BRAKE SHUTDOWN INPUT
17	GRAY	(-) HOOD PIN INPUT (NC OR NO)
18	VIOLET/YELLOW	(-) 200mA STARTER OUTPUT
19	BLUE*	FACTORY HORN INPUT (Use Jumper to set polarity)
20	GRAY/BLACK	(-) DIESEL WAIT TO START INPUT
21	WHITE/BLUE	ACTIVATION INPUT
22	ORANGE	(-) 200mA ACCESSORY OUTPUT
23	VIOLET/WHITE	TACHOMETER INPUT
24	GREEN/WHITE	(-) 200mA FACTORY ALARM ARM OUTPUT

*This optional input can be connected to the horn circuit (+ or -). When this wire receives input for a minimum of .5 seconds, the system reports a trigger on the 2-way remote. This is useful on vehicles that have a factory security system that can be armed/disarmed with the Directed system. This system will not report that a zone has been triggered when unlocking with the 2-way remote. This feature is not available on the 1-way remote.

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Guide Translations

For a Spanish or French version of the Installation Guide, please download it from www.directechs.com under Resources.

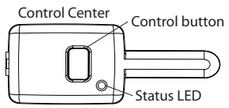
Estimado Cliente:
Si buscas los guías de instalación, por favor de bajar lo del Resources en el sitio www.directechs.com

Cher consommateur:
Si vous désirez une version française ou espagnole du guide d'installation, veuillez s.v.p. le télécharger à l'adresse suivante: www.directechs.com en appuyant sur l'icône <<Resources>>.

Remote Start, 8-pin connector

H/1	PINK	(+) IGNITION 1 INPUT/OUTPUT
H/2	RED/WHITE	(+) 12VDC CONSTANT INPUT for ignition 2 and flex relays
H/3	ORANGE	(+) ACCESSORY OUTPUT
H/4	VIOLET	(+) STARTER OUTPUT
H/5	RED	(+) 12VDC CONSTANT INPUT for ignition 1 relay
H/6	PINK/WHITE	(+) IGNITION 2 / FLEX RELAY OUTPUT
H/7	PINK/BLACK	(+) FLEX RELAY INPUT 87A key side (if required) of FLEX RELAY
H/8	RED/BLACK	(+) 12VDC CONSTANT INPUT for ACC and starter relays

Installation Points



Learning the Tach (not needed with Virtual Tach)

To learn the tach signal:
1. **Start** the vehicle with the key.
2. Within 5 seconds, **press** and **hold** the Control button.
3. After 3 seconds the status LED on your Control Center lights constant when the tach signal is learned.
4. **Release** the Control button.

Learning Virtual Tach (not needed with hardwire tach inputs)

To program Virtual Tach:
1. After the install is complete, **remote start** the engine. The programming operation may require 3 cranks of the starter before the engine starts and runs. Do not turn off the remote start if this happens, it is a normal programming operation.
2. Once the engine begins running, let it run for at least 30 seconds.
3. Using the Remote, send the Remote start command to turn remote start off. Virtual Tach is programmed.

To reset Virtual Tach, go into the Remote Pairing section of this guide and **press/release** the Control button 4 times for step #4, then **press** and **hold** the Control button to reset Virtual Tach. Virtual Tach **cannot** be reset with the Bitwriter.

Note: Virtual Tach cannot be used in MTS Manual Transmission Mode. It is also not recommended for diesel trucks.

Virtual Tach handles disengaging the starter motor during remote starting – it does not address over-rev. If the customer wants to have the over-rev protection capability, the tach wire must be connected.

> **Important:** After successfully learning Virtual Tach, a small minority of vehicle starters may over crank or under crank during remote start. The Bitwriter can be used to fine tune the starter output time in 50mS increments to compensate for such an occurrence.

Remote Start Shutdown/Startup Diagnostics

To perform shutdown diagnostics:
1. With the ignition Off, **press** and **hold** the Control button.
2. **Turn** the ignition On and then back Off while **holding** the Control button.
3. **Release** the Control button.
4. **Press** and **release** the Control button. The status LED flashes to report the last shutdown for one minute or until the ignition is turned on, as shown in the following table:

Status LED Flashes	Shutdown Mode
1 flash	Runtime expired
2 flashes	Over-rev shutdown
3 flashes	Low or no RPM
4 flashes	Transmitter shutdown (or optional push button)
5 flashes	(+) Brake shutdown
6 flashes	(-) Hood shutdown
7 flashes	Timer mode/Turbo mode/Manual mode error *
8 flashes	Neutral safety shutdown
9 flashes	Low battery (voltage mode)
11 flashes	Wait-to-start input timed out

* Timer mode error: Ignition is on or shutdown input is active when activating timer mode.
Turbo mode error: Turbo mode is programmed off, engine is not on or shutdown input is active.
Manual mode error: MTS mode not enabled.

Startup Diagnostics: If the vehicle fails to activate the remote start, the remote start module will flash the parking lights on the vehicle to notify you of what caused the no-start situation.

Parking Light Flashes
5 flashes Brake wire is active
6 flashes Hood pin wire is active
7 flashes Manual transmission mode is enabled and not initialized.
8 flashes Neutral safety wire has no ground or the neutral safety switch is Off.

Remote Pairing

Prepare the vehicle system to be Paired with a new remote
1. **Turn** the key to the ON position.
2. Within 5 seconds **press** and **release** the Control button on the system's Control Center one time.
3. Within 5 seconds, **press** and **hold** the Control button on the Control Center. The status LED will flash one time and the horn honks to confirm the vehicle is ready for remote pairing.
4. **Release** the Control button and proceed below.

Note: If no remote pairing results, the system will exit after 60 seconds.

Prepare the new remote to be Paired with the system
Remote Pair matches your remote to the system. Make sure the remote is set for the desired Car 1 (Default) or Car 2 operation for the system it will be paired with.

1. **Press** and **hold** the ƒ button for 8 seconds.
2. Wait for the Transmit LED to light solid. **Release** the ƒ button.
3. **Press** the ↻ for 1 second. The transmit LED will blink 3 times.
4. Within 5 seconds, **press** the 🔒 button.
5. The vehicle horn will honk. You have now successfully learned the remote to the vehicle remote start system.
6. **Press** the ƒ button two times to exit learn routine on the remote. The transmit LED will turn off and exit.

Basic Remote Functions

Level / Button	DIRECT ACCESS	ƒ X 1	ƒ X 2	ƒ X 3	ƒ X 4
🔒	LOCK	SILENT LOCK			
🔓	UNLOCK	SILENT UNLOCK	REMOTE VALET	CAR FINDER	
↻	REMOTE START	RUNTIME RESET	TIMER MODE	SMART START	REAR DEFOGGER
AUX	TRUNK RELEASE	AUX 1	AUX 2	AUX 3	AUX 4
ƒ	FUNCTION SHIFT				

Bitwriters with a date code of 6a or older require an IC upgrade (p/n 998M). Some bitwriters with a date code of 6B do not require the IC upgrade, refer to tech tip # 1112 for more information.

D2D DATA TO DATA™

The Bitwriter® (p/n 998U) requires chip version 2.7 or newer to program this unit.

Programming System Features

The System Features Learn Routine dictates how the unit operates. It is possible to access and change most of the feature settings using the Control button.

1. **Turn** the ignition on, then off.
2. **Select** a Menu. **Press** and **hold** the Control button. The number of horn honks and LED flashes indicates the menu number. 1 horn honk and LED flash indicates menu 1, 2 horn honks and LED flashes - menu 2 and 3 horn honks and LED flashes for menu 3.
3. When the desired menu horn honks are heard with LED flashes, **release** the Control button.
4. **Select** a Feature. **Press** and **release** the Control button the number of times corresponding to the feature you wish to change. Then **press** and **hold** one more time to select the features.
5. **Program** the Feature. While holding the Control button, you can program the feature using the remote control.

For features with only two options; = option 1 while = option 2.
For features with more than two options; selects the options in ascending order, while selects them in descending order.

Note: Pressing button resets the feature to the factory default.

Once a feature is programmed:
- Other features can be programmed within the same menu
- Another menu can be selected
- The learn routine can be exited if programming is complete

To access another feature in the same menu:
1. **Press** and **release** the Control button the number of times necessary to advance from the feature you just programmed to the next one you want to program.
2. Then **press** the Control button once more and **hold** it.

To select another menu:
1. **Press** and **hold** the Control button.
2. After 3 seconds, the unit advances to the next menu and the horn honks and the LED flashes, indicating which menu has been accessed.

The learn routine exits if any of the following occurs:
- The ignition is turned On
- There is no activity for 30 seconds
- The Control button is pressed too many times

Feature Menus

Default settings are in **bold** type. New features are **bold** in solid grey rows.

Menu 1 - Vehicle Integration

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	System Locking Mode	**Active Locking**	Passive Locking	Auto Re-locking		
2	Panic Mode	**On**	Ign Off only	Off		
3	Horn Function	**Confirmation Chirp (20 ms) & Panic**	Confirma-tion Chirp (30 ms) & Panic	Confirma-tion Chirp (40 ms) & Panic	Confirma-tion Chirp (50 ms) & Panic	Confir-mation Chirp Off - Panic Only (Pulsed)
4	Ign-controlled locks	**No Ign-locking**	Lock & Unlock	Lock Only	Unlock Only	
5	Door Lock Pulses	**Single**	Double Unlock Only	Double Lock Only	Double Lock & Unlock	
6	Door Lock output duration	**0.8 sec.**	3.5 sec.	0.4 sec.		
7	**2nd Unlock**	**2nd unlock on/ Ign-control after first unlock**	2nd unlock on/ Ign-control with first unlock			
8	Comfort Closure	**No Comfort Closure**	Comfort Closure 1	Comfort Closure 2		
9	Hood Trigger Type	**Normally Open**	Normally closed			
10	**Door Switch Type**	**Normally open**	Normally closed			
11	**Ignition Off msg (remote button unlock)**	**On**	Off			

Menu 2 - Convenience

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	One-time Bypass	**No Bypass**	Bypass			
2	Valet Switch Pulse Count	**1**	2	3	4	5
3	Door Ajar Error msg	**On**	Off			
4	Ign-controlled Dome light	**On**	Off			
5	OEM Alarm Disarm w/Aux/trunk	**On**	Off			
6	OEM Alarm Disarm Output	**With Unlock**	Before Unlock	Remote Start Only		
7	OEM Alarm Disarm Pulses	**1**	2			
8	Aux 1 Output type	**Validity**	Latch	Latch/ reset/ign	Timed	Off (5)/2nd Unlock (6)
9	Aux 1 Linking	**No Linking**	Link to Lock	Link to Unlock	Link to Lock/ Unlock	Link to Remote Start only
10	Aux 2 Output type	**Validity**	Latch	Latch reset/ign	Timed	Off (5)/2nd unlock (6)
11	Aux 2 Linking	**No Linking**	Link to Lock	Link to Unlock	Link to Lock/ Unlock	Link to Remote Start only
12	Aux 3 Output type	**Validity**	Latch	Latch reset/ign	Timed	Off (5)/2nd unlock (6)
13	Aux 3 Linking	**No Linking**	Link to Lock	Link to Unlock	Link to Lock/ Unlock	Smart Key Control (Link to Remote Start Off)
14	**Aux 4 Output Type**	**Validity**	Latch	Latch reset/ign	Timed	Off (5)/2nd Unlock (6)
15	**Aux 4 Linking**	**No linking**	Link to Lock	Link to Unlock	Link to Lock/ Unlock	Link to Remote Start Only
16	**Aux/Trunk Output type**	**Validity**	Off	2nd unlock		

Menu 3 - Remote start

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	Transmission Mode	**Manual**	Automatic			
2	Engine Checking Mode	**Virtual Tach**	Voltage	Off	Tachom-eter	
3	Cranking Time	**0.6 sec.**	0.8 sec.	1.0 sec.	1.2 sec.	1.4 (5) /1.6 (6)/ 1.8 (7)/ 2.0 (8)/ 4.0(9)
4	Remote Start Runtime	**12 min.**	24 min.	60 min.		
5	Activation Pulse Count	**1**	2			
6	Turbo Mode	**No Turbo Mode**	On-1 min.	On-3 min.	On-5 min.	On-10 min.
7	Timer Mode Runtime	**12 min.**	3 min.	6 min.	9 min.	
8	Flex Relay Function	**Ignition 2**	Acces-sory 2	Starter 2		
9	Diesel Start Delay	**Wait-to Start input**	Timed 15 sec.	Timed 30 sec.	Timed 45 sec.	
10	Accessory during Diesel Start Delay	**On**	Off			
11	Status 2 Output	**Status**	Latch Rear Defogger	Pulse Rear Defogger		
12	Parking Light Output	**Constant**	Pulsed	Off		
13	Anti-grind Output	**On**	Off			
14	Tach Mode Starter Release	**Normal**	Increase	Decrease		
15	Vehicle temp auto report*	**Off**	On			
16	**Remote Start Safelock**	**Off**	On			

* not applicable to 1way remote

Bitwriter - only Options

If programming with the Bitwriter®, the learn routine can be locked or unlocked. If the learn routine has previously been locked, it must be unlocked with Bitwriter® - this cannot be done manually with the Control button.

The Bitwriter® gives you access to a wider range of system options. These features and the adjustments that may be programmed are described in the table below. Default settings are in **bold**.

Menu Item	Feature	Default	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	Aux/Trunk Icon Type*	**Trunk**	Window	Sunroof	Audio	Lights/Left dr/Right dr/Rear Hatch
2	Aux 1 Timed Output	**30 sec.**	Options: 1 to 90 sec.			
3	Aux 1 Icon Type*	**Pulsed**	Trunk	Window	Sunroof	Audio/Lights/Left dr/ Right dr/Rear Hatch/ Timed/Latched
4	Aux 2 Timed Output	**30 sec.**	Options: 1 to 90 sec.			
5	Aux 2 Icon Type*	**Pulsed**	Trunk	Window	Sunroof	Audio/Lights/Left dr/ Right dr/Rear Hatch/ Timed/Latched
6	Aux 3 Timed Output	**30 sec.**	Options: 1 to 90 sec.			
7	Aux 3 Icon Type *	**Pulsed**	Trunk	Window	Sunroof	Audio/Lights/Left dr/ Right dr/Rear Hatch/ Timed/Latched
8	Aux 4 Timed Output	**30 sec.**	Options: 1 to 90 sec.			
9	Diesel Start Delay type (seconds)	**15 sec.**	Options: 1 to 90 sec.			
10	Timer Mode Runtime (minutes)	**12 min.**	Options: 1 to 16 min.			
11	Timer Mode Starts	**6 starts**	Options: 1/2/3/4 to 24 (Starts) in increments of 2			
12	Timer mode intervals (hours)	**3 hr.**	Options: 1/2/**3**/4 to 24 in 2 hour increments			
13	Smart start low temp	**0° (F)**	Options: OFF, -20° to 70° in 10° increments			
14	Smart start high temp	**100° (F)**	Options: OFF, 40° to 130° in 10° increments			
15	Smart start low bat-tery (volts)	**10.5V**	Options: OFF, 9V to 12.5V in 0.5V increments			
16	Starter Release Fine Tune	**6 (normal)**	Options: 0 to 20 in increments of 1			
17	Feature Programming	**Unlocked**	Locked			
18	Transmitter Program-ming	**Unlocked**	Locked			
19	**Remote Start Runtime**	**12 min.**	Options: 1 to 60 min.			
20	**Virtual Tach Fine Tune**	**Not Ini-tialized**	Options: Not initialized, 0 to 1000 in 50 millisecond increments			

*available on remotes with display screens only

See full Installation Guide for more detailed information on this system. Such information and more can be found online at:
www.directechs.com

Directed® ELECTRONICS

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Python®

Python®

WARNING
VEHICLE EQUIPPED WITH A DEI® REMOTE START SYSTEM
If vehicle battery is disconnected, the system may attempt to start when the battery is reconnected or transmitter is used. Press brake to disengage. Check with vehicle owner to determine if hood pin switch or override switch was installed to disengage the system for service.
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1. 1. ☐ Mr. 2. ☐ Mrs. 3. ☐ Ms. 4. ☐ Miss

First name | Initial | Last name

Street | Apt.

City | State/Province | Zip/Postal code

E-mail address

2. Your date of birth: / (Month / Year)

3. Marital status: 1. ☐ Married 2. ☐ Single

4. Date of purchase: / / (Month / Day / Year)

5. Model number:

6. Name of store where purchased:

7. Price paid *(excluding sales tax)*: $ .00

8. Which Directed Electronics brand did you purchase?
1. ☐ Autostart
2. ☐ Avital
3. ☐ Clifford
4. ☐ Python
5. ☐ Viper

9. What type of product did you purchase?
1. ☐ Security system
2. ☐ Security system with remote start
3. ☐ Remote start system
4. ☐ Keyless entry system

10. In what vehicle will this product be used?

Vehicle type:
1. ☐ Car
2. ☐ Truck
3. ☐ SUV
4. ☐ Van
5. ☐ Minivan
6. ☐ Motorcycle
7. ☐ Boat
8. ☐ Motor home
9. ☐ Other

Make of vehicle:

Model name:

VIN #:

Year:
A. ☐ Bought new
B. ☐ Bought used
C. ☐ Leased
D. ☐ Leased used

11. How did you first become aware of this product? *(check one)*
01. ☐ Local newspaper
02. ☐ Yellow pages
03. ☐ Magazine advertisement
04. ☐ TV commercial
05. ☐ Magazine article/ review
06. ☐ Friend/Relative's recommendation
07. ☐ Radio commercial
08. ☐ Salesperson's recommendation
09. ☐ Manufacturer's website
10. ☐ Retailer's website
11. ☐ Internet forum
12. ☐ Other

12. What factors most influenced the purchase? *(check up to three)*
01. ☐ Directed Electronics reputation
02. ☐ Brand reputation
03. ☐ Experience with Directed product
04. ☐ Experience with dealer
05. ☐ Value/Price
06. ☐ Warranty
07. ☐ Special features
08. ☐ Quality/Durability
09. ☐ Sound board/In-vehicle demo
10. ☐ Rebate/Promotion
11. ☐ Style/Design/Color
12. ☐ Dealer proximity
13. ☐ Friend/Relative's recommendation
14. ☐ Salesperson's recommendation
15. ☐ Ease of installation
16. ☐ Compatibility with vehicle
17. ☐ Other

13. What benefits most influenced your decision to purchase this product? *(check up to three)*
01. ☐ Improved security
02. ☐ Improved convenience
03. ☐ Improved performance
04. ☐ Compatibility with vehicle
05. ☐ Ease of installation
06 ☐ Style/Design/Color
07. ☐ Special features
08. ☐ Quality/Durability
09. ☐ Increase vehicle value
10. ☐ Functionality
11. ☐ Warranty
12. ☐ Price/Value
13. ☐ Rebate/Promotion
14. ☐ Immediate availability
15. ☐ Friend/Relative's recommendation
16. ☐ Salesperson's recommendation
17. ☐ Dealer proximity

14. What other brands did you seriously consider before making this purchase?
1. ☐ No other brands considered
2. ☐ Other Directed Electronics brands
3. ☐ Code Alarm
4. ☐ Audiovox
5. ☐ Auto Page
6. ☐ Compustar
7. ☐ Prestige
8. ☐ Pursuit
9. ☐ Crime Stopper
10. ☐ Bulldog

15. *Not including yourself*, what is the GENDER and AGE (in years) of children and other adults living in your household?
1. ☐ No one else in household 2. ☐ Child under 1 year

Male	Female	Age	Male	Female	Age
1. ☐	2. ☐	yrs.	1. ☐	2. ☐	yrs.
1. ☐	2. ☐	yrs.	1. ☐	2. ☐	yrs.

16. Occupation/Employment status: *(check all that apply)*

	You	Spouse
Professional/Technical	☐ 01.	☐
Upper management/Executive	☐ 02.	☐
Middle management	☐ 03.	☐
Sales/Marketing	☐ 04.	☐
Clerical/Service worker	☐ 05.	☐
Tradesman/Machine operator/Laborer	☐ 06.	☐
Teacher/Educator	☐ 07.	☐
Healthcare - Physician/Nurse/Other	☐ 08.	☐
Homemaker	☐ 09.	☐
Military	☐ 10.	☐
Retired	☐ 11.	☐
Self employed/Business owner	☐ 12.	☐
Work from home office	☐ 13.	☐

17. Which group describes your annual family income?
01. ☐ Under $15,000
02. ☐ $15,000-$19,999
03. ☐ $20,000-$29,999
04. ☐ $30,000-$39,999
05. ☐ $40,000-$49,999
06. ☐ $50,000-$59,999
07. ☐ $60,000-$74,999
08. ☐ $75,000-$99,999
09. ☐ $100,000-$124,999
10. ☐ $125,000-$149,999
11. ☐ $150,000-$174,999
12. ☐ $175,000-$199,999
13. ☐ $200,000-$249,999
14. ☐ $250,000 & over

18. Level of education: *(check highest level completed)*
1. ☐ Completed high school
2. ☐ Completed college
3. ☐ Completed graduate school

19. For your primary residence, do you:
1. ☐ Own? 2. ☐ Rent?

20. What type of internet access do you use at home?
1. ☐ Dial-up
2. ☐ Cable
3. ☐ DSL
4. ☐ Other broadband (e.g. fiber optic, wireless Wi-Max)
5. ☐ Satellite

21. When new products that have the latest technologies appear on the market, do you or someone in your household:
1. ☐ Tend to buy such items as soon as they are available?
2. ☐ Tend to wait until the item has been around for a while before buying?

22. **To help us understand our customers' lifestyles, please indicate the interests and activities in which *you* or *your spouse* enjoy participating on a *regular* basis.**

Home Life

- 01. ☐ Grandchildren
- 02. ☐ Home improvement/Do-it-yourself
- 03. ☐ Gardening
- 04. ☐ Own a dog
- 05. ☐ Own a cat

Leisure

- 06. ☐ Cultural/Art events
- 07. ☐ Avid book reading
- 08. ☐ Bible/Devotional reading
- 09. ☐ Gourmet cooking/Fine foods
- 10. ☐ Wines
- 11. ☐ Art/Antique collecting
- 12. ☐ Stamp/Coin collecting
- 13. ☐ Crafts
- 14. ☐ Sewing/Needlework/Knitting

Travel

- 15. ☐ Airline club/Frequent flyer
- 16. ☐ Travel in USA
- 17. ☐ Foreign travel
- 18. ☐ Cruise ship vacations
- 19. ☐ RV vacations
- 20. ☐ Casino gambling

Investing and Money

- 21. ☐ Shopping by catalog/mail order
- 22. ☐ Shopping by internet
- 23. ☐ Use credit cards regularly
- 24. ☐ Donate to charitable causes
- 25. ☐ Investments/Money making opportunities
- 26. ☐ Contests/Sweepstakes

Great Outdoors

- 27. ☐ Hunting/Shooting
- 28. ☐ Fishing
- 29. ☐ Camping/Hiking
- 30. ☐ Wildlife/Environmental issues
- 31. ☐ Boating/Sailing

Sports, Fitness & Health

- 32. ☐ Physical fitness/Exercise
- 33. ☐ Walking for health
- 34. ☐ Health/Natural foods
- 35. ☐ Dieting/Weight control
- 36. ☐ Self-improvement
- 37. ☐ Golf
- 38. ☐ Biking
- 39. ☐ Snowboarding/Snow skiing
- 40. ☐ NASCAR

Thanks for taking the time to fill out this questionnaire. Your answers will be used for market research studies and reports. They will also allow you to receive important mailings and special offers from a number of fine companies whose products and services relate directly to the specific interests, hobbies, and other information indicated above. Through this selective program, you will be able to obtain more information about activities in which you are involved and less about those in which you are not. Please check here if, for some reason, you would prefer *not* to participate in this opportunity. ☐

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